THE

Journal of the American Medical Association.

EDITED FOR THE ASSOCIATION BY N. S. DAVIS.

PUBLISHED WEEKLY.

VOL. II. CHICAGO, JUNE 21, 1884. NO. 25.

ORIGINAL ARTICLES.

THE TREATMENT OF COMPOUND FRACTURES, INCLUDING A REPORT OF ONE HUNDRED AND FORTY-FOUR CASES WITHOUT A DEATH FROM SEPTIC INFECTION, AND ONE HUNDRED CASES WITHOUT A DEATH FROM ANY CAUSE.

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MR. PRESIDENT AND GENTLEMEN:—The treatment of compound fractures is a subject of great practical importance. In advocating any special plan of treatment there are several salient points to consider.

First. The method should be a safe one and proved to be such by the crucial test of experience.

Second. The method of treatment should yield results, unattended by septic infection, by non-union, by shortening, and by deformity.

Third. The method should be a simple one, and uncomplicated by any inaccessible splint, or complicated dressing.

That plan of treatment of compound fractures, therefore, which has safety, complete restoration of the injured member, absolute simplicity, and at the same time as slight constitutional disturbance as possible, as its characteristic features, is a method which would naturally commend itself to the profession.

It will be the aim of this paper to demonstrate by the results of a large number of cases that the treatment of compound fractures is best accomplished by adherence to three well-recognized and established principles.

1st. Absolute cleanliness.

2nd. Immediate fixation.

3rd. Provision for free drainage when necessary.

The treatment which has been employed for the most part in the cases to be reported is in brief as follows:

The patient having been taken to the operating theatre, is placed upon the table, and if the exigencies of the case demand, an anæsthetic is at once administered. Anæsthesia relaxes the muscles, affords the surgeon an opportunity to explore thoroughly the extent of the injury without inflicting pain. The injured limb is washed with soap and warm water and scrubbed well with a brush. The dirt, debris, and blood are thus removed, and the hair on the extremity is cleanly shaved, and then the limb is irrigated for a few moments with a solution of carbolic acid (1-40) or with a solution of corrosive sublimate (1-2,000) or with any other well-known disinfectant. Gentle traction is made upon the extremity, while at the same time counter-extension is employed with a view to bringing the broken fragments into coaptation. If the bones protrude through the wound and cannot be reduced without the exercise of too much violence, the projecting end is removed by a chain-saw. It has been my custom when the protruding bones cannot be reduced without the exercise of undue violence, to divide subcutaneously all tendons and thus overcome all resisting forces. This operation secures physiological rest during the repair of the fracture.

Attention now must be directed to the wound itself. Any loose fragments or spiculæ of bone are removed, except where they are adherent to periosteum, in which case these detached pieces are preserved, and they seldom exfoliate owing to the blood-supply through the periosteum. The interior of the wound is thoroughly irrigated by a syringe, or by a tube from an Esmarch's wound-douche. Having cleansed the limb, including even the fingers and toes, and having adjusted the fragments and having washed out and disinfected the interior of the wound, the application of a splint is now made. The limb is elevated, and under it are placed towels saturated in some disinfectant solution, which keeps the limb from coming in contact with the covering upon the operating-table, or from the opposite limb, or from any part of the body. If the wound is small a piece of surgically clean adhesive plaster is placed over the seat of fracture, and then collodion is painted over the plaster. If the wound communicating with the seat of fracture is too large to hermetically seal in the manner already described, a part of the wound can be closed by catgut suture, and a drainage-tube is introduced into the bottom of the wound. Decalcified bone drainage-tubes are used, as they seem to answer the purpose in the most satisfactory manner. Into the wound, and over, and around the wound is sprinkled a layer of iodoform and then over this any of the many differently prepared dressings, such as corrosive sublimate gauze, or Iodoform gauze, or absorbent cotton. The limb is now ready for the splint. A roller of Gamgee's absorbent cotton is heated which causes it to swell, and this is now made

to envelope the entire limb. Heating the cotton seems to permit it to expand, and any dressing, such as a plaster of Paris bandage, can be snugly applied over it, and the cotton will not lose its wonderful elasticity. During the application of the bandage, extension and counter-extension should be employed, the patient being at the same time well under the influence of ether. The bandage is now permitted to dry, and great care must be exercised while the bandage is drying, lest the patient while returning to consciousness, disturb the setting of the plaster and consequently the wound. The patient is placed in a suitable bed after the plaster of Paris bandage is firm. If there is no irritation or unpleasant sensation at the seat of fracture, if the toes or fingers are free from any numbness or cyanosis, if the respiration, pulse and temperature are normal, the first dressing is left undisturbed. In many cases the plaster of Paris bandage is worn until the fracture is repaired and primary intention has been obtained.

If, on the other hand, there is a slight irritation or unpleasant sensation at the seat of fracture, if the toes or fingers are numb or cyanotic, if the respiration, pulse and temperature are not normal, or if there are any other indications of disturbance, a fenestrum is cut over the site of the fracture, and the wound examined. Should the wound be inflamed and the tissues tense, the opening down to the fracture should be enlarged and the bottom of the wound washed out with a solution of bi-chloride of mercury or carbolic acid. The wound is now left to freely suppurate exposed to the air. The key-note to success under these conditions when suppuration is in process, is to keep the parts absolutely clean and pure from all contamination. A healthy granulating surface, secreting pure, rich, yellow, creamy pus is in itself a barrier to the entrance of septic absorption into the general system. If the granulations are weak and flabby, a poultice of flax-seed and carbolic acid placed over the wound for a few hours will stimulate the granulations. When the poultice is removed, some stimulating application may be employed with advantage, among which may be mentioned balsam of Peru, iodoform, powdered red cinchona bark, bismuth and oxide of zinc. These remedies seem to stimulate with greater efficiency when employed in alternation, as one remedy by continual application soon loses its efficacy. Absorbent cotton should be nicely packed in and around the fenestrum and changed whenever soiled. When a fenestrum exists, the limb can be suspended to great advantage in a Fluhrer's swing, which not only affords the patient great comfort, but permits the limb to be turned so as to allow free drainage from the open wound. When the leg, for example, is thus suspended, the patient can move about in bed, or even lie upon his side. If the inflammatory swelling is considerable, and other things denote that the splint is too tight, the plaster of Paris bandage is immediately cut down and the leg put into a fracture-box. This point cannot be too strongly impressed. Plaster of Paris can do irreparable mischief in a few hours, and for this reason, the splint should be sacrificed at once when there is the least suspicion of anything wrong. It has been my misfortune to have seen in the hands of a colleague two patients die from neglect to cut down the splint before it was too late. In both of these cases, gangrene was the cause of death. Plaster of Paris bandage in the treatment of fractures, properly and carefully applied, is the greatest boon. On the other hand, improperly or carelessly applied, it becomes a most potent source of evil. After the leg has been removed from the plaster of Paris bandage it should be put into a fracture-box. It is seldom the surgeon is required to do this; but occasionally, from some unknown cause, it becomes necessary. The fracture-box should be filled with oakum, or what is better, ordinary bran thoroughly soaked with carbolic acid, and then allowed to dry in the sun. This hint was given to me by Prof. Hamilton, whose reputation in the treatment of fractures is world-wide. When the limb is in proper condition, it should be again replaced in the plaster of Paris dressing, to remain until union has taken place. Great care should be taken to prevent any infiltration of pus or the formation of an abscess. Counter-openings should be promptly made whenever necessary.

Before entering upon a discussion in detail of this subject, it is well to define exactly what is meant by a compound fracture; for frequently surgeons report cases of simple fracture associated with a lacerated wound under the heading of compound fractures. The entrance of air to the seat of fracture is an essential condition to the formation of a compound fracture, and hence it is evident that the wound in the soft parts is produced by violence which is exercised from within, and finally, in a pathological sense, it is the presence of air that causes the great difference in the repair of simple and compound fractures. We know by microscopical investigations that in simple fractures, from the granulation tissue cartilage is formed, and that bone is developed from the cartilage—whereas in compound fractures no cartilage is formed, unless all suppuration is completely prevented. It is suppuration which prevents the development of cartilage. Hence it is evident that the processes of repair are different, and that, owing to the presence of air in the seat of fracture, additional dangers are unavoidably encountered.

In submitting these cases of compound fractures to this distinguished Association, I shall endeavor to prove that the success, which I may say has far exceeded my most sanguine expectations, is equal to that obtained by any other method. I shall demonstrate by referring to a large number of cases, that exposure of a fracture to the air whenever necessary, with proper precautions, is attended with no danger of decomposition or septic infection. I shall also establish the clinical fact that this plan of treating compound fractures has been unattended in a single case with non-union or with deformity. Finally, after showing that the mortality is no greater than by any other method, and that as regards shortening, deformity and non-union, the results are equally satisfactory, it still remains to prove that during the process of repair, there is no more constitutional disturbance than is present during healing by any other method. The solution of this most difficult

problem can only be obtained by a careful analysis and thorough examination of the daily charts, which record every twelve hours the pulse, respiration and temperature in each case. These charts are all here on the table for inspection and study. It will suffice to say that in dividing the entire number into thirds, in the first third two patients reached a temperature of 104 F. and one patient 104½ F. on only one occasion; but these three temperatures fell in a very short time to 100 F. Of the remaining number in the first third, ten cases reached a temperature of 103 F. and 102 F. respectively; but these temperatures were not elevated any length of time, and the charts show a gradual decrease to the normal standard. In the second third, no temperatures rose above 101 F. during the entire process of repair.

In the last third, the temperature never rose higher than 100 F. at any time, and in these cases the respiration, pulse and temperature were absolutely normal.

The following cases of compound fractures have been under my charge in Bellevue, St. Vincent, and the Ninety-ninth Street Reception Hospitals, in New York City, and also in private practice. Several cases are also included which have been previously published by myself in connection with another subject. From the list is excluded one case which terminated fatally, and I mention this case with the following explanation: The patient was a boy, who fell from the top of a high building, and sustained, as a result of the fall, three compound fractures, one of each thigh and one of the lower jaw.

The boy was treated by Dr. T. H. Manley, Assistant Surgeon to the Ninety-ninth Street Hospital during my absence in Europe, but I saw the case with him upon my return. The boy died from exhaustion, consequent upon profuse hæmorrhage, and the autopsy, which was conducted by Prof. W. H. Welch, failed to show any evidences of septicæmia, or blood-poisoning of any kind. While the case was not mine, I prefer to mention it with the others, because the patient was admitted into a hospital of which I am the attending surgeon. But the case was admitted to the hospital and to my wards during my vacation, and was under the charge of Dr. Manley, who, it may be said, treated this case, as well as many other cases of compound fracture, with unusual skill.

In Dr. Manley's case there was no evidence of blood-poisoning, notwithstanding the fact that his patient suffered from a double compound fracture of the thigh, and also one of the lower jaw. My report covers 144 cases of compound fractures which have occurred in succession. While it is impossible to describe in detail each of these 144 consecutive cases, I have arranged them in tables for publication. The charts of the cases are here upon the table for examination; also in these bottles are some 200 pieces of fragments of bone which have been removed in the cases of compound fractures of the skull and long bones. I shall take up in order the different varieties of fractures, and then give a summary. They are tabulated in the following order: Skull, thigh, leg, arm, forearm, lower jaw, hand and foot, miscellaneous fractures.

COMPOUND FRACTURES OF THE SKULL.

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
I.	H. R.	49	Oct., 1883	Compound comminuted fracture of skull. Patient struck with a brick over frontal bone. Patient conscious. No paralysis.	Patient was trephined; 28 pieces of bone removed; wound washed out with carbolic acid water; wound left open.	Recovery
II.	R. O.	31	Jan., 1883	Compound comminuted fracture of skull, produced by kick of a horse; 2½ inches by 1½ inches was the size of wound. Patient unconscious.	Patient was trephined; 64 pieces of bone removed; wound left open to granulate. Irrigated with carbolic acid.	Recovery
III.	D. F.	28	May, 1883	Compound comminuted and depressed fracture of skull. Paralysis of arm; severe hæmorrhage. Stone fell from a height of 25 feet.	Trephined; 16 pieces of bone removed. Paralysis disappeared. Wound treated openly.	Recovery
IV.	A. H.	18	April, 1883	Depressed fracture, followed by persistent headache for 6 years. One pupil dilated. End of 6 months, after operation, no headache.	Trephined over fracture. Dura mater thickened. Pachy-meningitis externa. Headache disappeared. Wound open.	Recovery
V.	P. R.	40	February, 1883	Compound fissured fracture of skull.	Treated openly with carbolic acid balsam of Peru.	Recovery
VI.	B. C.	45	Jan., 1883	Compound fissured fracture of skull. Fracture extending several inches.	Treated openly; carbolic acid, balsam of Peru.	Recovery
VII.	M. D.	8	May, 1883	Boy struck with a pitcher. Compound fracture of skull, extending over a large area.	Treated openly; carbolic acid, balsam of Peru.	Recovery
VIII.	E. D.	34	Feb., 1884	Compound fracture of skull. Patient was struck with an axe. Fracture was punctured. Wound in scalp extensive. No symptoms.	Trephined because a punctured fracture. Removed 10 pieces of bone splintered off from internal table.	Recovery
IX.	G. C.	8	Jan., 1884	Caries and abscess mastoid portion of temporal bone. Strumous origin.	Trephined opened abscess. Gouged out carious bone. Balsam of Peru.	Recovery
X.	J. D.	30	Feb., 1883	Compound fracture of orbital plate of frontal bone. Gunshot injury.	Wound kept clean; washed with carbolic acid.	Recovery

COMPOUND FRACTURES OF THE SKULL—*Continued.*

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
XI.	J. D.	53	Feb., 1884	Compound fracture of skull. Patient unconscious, and in profound shock.	Stimulants. Patient never rallied.	Died within 24 hours
XII.	U. S.	20	Oct., 1883	Compound fracture right zygoma. Fracture extending downward toward base.	Stimulants. Patient never rallied.	Died within 24 hours
XIII.	A. C.	24	May, 1883	Compound depressed fracture of skull.	Stimulants. Patient never rallied. Pulse scarcely perceptible.	Died within 6 hours
XIV.	G. H.	35	April, 1883	Compound fracture mastoid portion of temporal bone, result of gunshot injury.	Bullet and loose bone removed. Patient bled profusely.	Died within 48 hours
XV.	J. C.	62	May, 1882	Compound fracture frontal and nasal bones.	Wound washed. Nasal bones adjusted. Patient did well.	Recovery
XVI.	G. P.	35	Nov., 1883	Compound fracture of skull. Result of 3 pistol-shots.	Loose fragments removed, also bullet; wound cleansed.	Died within 24 hours
XVII.	T. D.	30	Sept., 1883	Compound fracture of frontal bone.	Wound cleansed; dressed with oakum and balsam of Peru.	Recovery
XVIII.	G. H.	20	April, 1882	Compound fracture of skull. Result of gunshot injury.	Stimulants. Patient never rallied.	Died within 24 hours
XIX.	J. L.	46	March, 1884	Compound punctured fracture of skull. Patient was struck by locomotive. Paralysis, etc.	Trephined. Removed 25 pieces of bone. Wound treated openly.	Recovery
XX.	J. K.	14	April, 1884	Compound depressed fracture skull (frontal bone). Dura mater lacerated. Brain substance protruded.	Trephined. Removed 8 large pieces; sewed up dura mater with catgut suture.	Recovery
XXI.	A. H.	23	Sept., 1882	Compound depressed fracture of skull. Patient in profound shock.	Trephined; 28 pieces removed.	Recovery
XXII.	J. H.	7	Sept., 1883	Compound depressed fracture.	Bones removed.	Recovery
XXIII.	T. C.	32	May, 1884	Double compound fracture of skull, also nasal bones. Struck by glass bottle.	Drainage-tube inserted; wound sewed up; no depression.	Recovery

This table shows twenty-three cases of compound fractures of the skull with no deaths except six, which occurred within forty-eight hours after injury, and which were due to shock. These patients never rallied from collapse and died from causes which could not have been prevented by any plan of treatment. Excluding then the six cases there remain 17 cases of Compound Fractures of the Skull in succession with no death, and of these seventeen consecutive and successful cases, ten of them were trephined. In two of the ten cases a disc of bone was removed for the purpose of elevating fragments. In the third case there were eight pieces of bone removed, in the fourth case ten pieces of bone were removed, and also the dura mater was torn and sewed up with catgut sutures. In the fifth case there were sixteen fragments removed, in the sixth case twenty-three fragments, in the seventh case twenty-five comminuted fragments, in the eighth case twenty-eight pieces, and in the ninth case sixty-four pieces, involving nearly the entire frontal bone, in the tenth case the mastoid cells were opened. Notwithstanding this series of compound fractures of the skull with paralysis, hæmorrhage, depression and compression, and all the other unfavorable symptoms, every case in order recovered.

COMPOUND FRACTURE OF THIGH.

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
I.	P. P.	20	May, 1883	Compound fracture of thigh. Patient was caught between wall and elevator for two hours.	Wound washed; sealed; plaster Paris bandage immediately applied.	Recovery
II.	L. D.	25	Sept., 1876	Compound fracture of thigh. Knee joint opened; great shock.	Primary amputation of thigh. (Upper ⅓.)	Recovery
III.	J. B.	12	Nov., 1883	Medullary canal freely opened by free incision on both sides to remove sequestrum.	Esmarch applied; large wound made; considerable hæmorrhage.	Recovery

This table shows three cases of compound fracture of the thigh with no deaths. One case was a boy who was caught between an elevator and the wall and who was thus held for two hours before he could be extricated.

The second was a man who was injured in such a way as to require primary amputation.

The third case was that of a boy who sustained a simple fracture, and at the seat of fracture an abscess was developed. The medullary canal was freely opened by two long incisions and some pus and carious bone were removed.

COMPOUND FRACTURES OF THE LEG.

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
I.	C. W.	20	Dec., 1883	Compound fracture leg. Tibia protruded, alarming hæmorrhage.	Plaster of Paris bandage applied at once. Cut down splint in six weeks. Union perfect.	Recovery
II.	R. H.	41	Aug., 1883	Compound fracture fibula. Contusions opposite leg.	Plaster of Paris bandage applied with a bracket.	Recovery
III.	R. M.	32	May, 1883	Compound fracture of leg.	Plaster of Paris bandage with fenestrum.	Recovery
IV.	W. E. M.	40	March, 1876	Compound fracture both bones. Tibia sawn off with chain saw.	Plaster of Paris bandage applied at once—with fenestrum.	Recovery
V.	J. D.	50	Apr., 1883	Compound fracture of leg.	Plaster of Paris bandage applied.	Recovery
VI.	B. C.	30	Oct., 1882	Compound fracture of leg.	Plaster of Paris bandage applied with fenestrum.	Recovery
VII.	T. C.	24	Apr., 1883	Compound fracture of leg.	Plaster of Paris bandage applied.	Recovery
VIII.	J. B.	35	Dec., 1882	Compound comminuted fracture leg. Laceration of soft parts.	Amputation six inches below knee-joint. (Primary.)	Recovery
IX.	M. F.	26	Oct., 1882	Compound fracture both bones. Ankle-joint opened, great comminution.	Plaster of Paris bandage. Patient left hospital in two months with good limb.	Recovery
X.	M. R.	20	Dec., 1875	Compound comminuted both bones of leg. Extensive burns and laceration of soft parts.	Amputation. (Primary.)	Recovery
XI.	A. D.	14	Nov., 1882	Compound fracture, ankle joint opened. Bones protruded.	Plaster of Paris bandage applied. Leg was satisfactory after removing splint; joint useful; very little impairment.	Recovery
XII.	O. D.	34	Jan., 1876	Compound fracture of leg. Great laceration of soft parts.	Amputation. (Primary.)	Recovery
XIII.	W. C.	24	Aug., 1883	Compound comminuted fracture of foot and ankle.	Amputation. (Secondary.)	Recovery
XIV.	F. McC.	24	Oct., 1882	Compound fracture of leg and simple fracture of thigh.	Plaster of Paris bandage applied to leg and thigh.	Recovery
XV.	T. M.	30	Aug., 1883	Compound fracture both bones of leg. Longitudinal fracture.	Plaster of Paris bandage applied.	Recovery
XVI.	T. S.	40	June, 1878	Compound fracture of leg. Result of a heavy stone falling upon the leg.	Plaster of Paris bandage applied immediately.	Recovery
XVII.	J. A.	30	Apr., 1883	Compound fracture of leg.	Plaster of Paris bandage applied.	Recovery
XVIII.	M. M.	22	Oct., 1882	Compound fracture of leg.	Plaster of Paris bandage applied. Fenestrum.	Recovery
XIX.	J. B.	34	Oct., 1883	Compound fracture of leg.	Plaster of Paris bandage applied.	Recovery
XX.	A. M.	34	Oct., 1875	Compound fracture of leg.	Amputation of leg. (Primary.)	Recovery
XXI.	R. W.	46	Dec., 1875	Compound fracture of leg. Ankle-joint involved.	Amputation at knee-joint. (Secondary.)	Recovery
XXII.	T. M.	12	Nov., 1875	Compound fracture of leg. Ankle-joint opened.	Amputation. (Primary.)	Recovery
XXIII.	J. B.	56	Apr., 1884	Compound fracture of head of tibia. Knee-joint filled with blood.	Plaster of Paris bandage applied. Good movement in joint; result satisfactory.	Recovery
XXIV.	T. T.	40	Oct., 1883	Compound comminuted fracture tibia. Ankle-joint involved.	Plaster of Paris bandage applied.	Recovery
XXV.	T. T.	40	March, 1876	Compound fracture of tibia and fibula.	Amputation. (Primary.)	Recovery
XXVI.	T. T.	40	Feb., 1884	Compound fracture of head of tibia, knee-joint implicated.	Plaster of Paris bandage. The joint was anchylosed.	Recovery
XXVII.	D. B.	35	March, 1884	Compound fracture of leg.	Plaster of Paris bandage applied.	Recovery
XXVIII.	T. M.	38	March, 1876	Compound fracture of leg.	Amputation. (Primary.)	Recovery
XXIX.	D. C.	24	Sept., 1883	Compound fracture of foot.	Amputation, (Primary.)	Recovery
XXX.	R. S.	20	Apr., 1883	Compound fracture of leg.	Plaster of Paris bandage applied.	Recovery
XXXI.	J. B.	40	Feb., 1883	Compound fracture involving knee-joint.	Plaster of Paris bandage applied. Knee anchylosed.	Recovery
XXXII.	P. Mc. K.	50	Feb., 1883	Compound fracture of leg.	Plaster of Paris bandage applied.	Recovery
XXXIII.	F. C.	31	Aug., 1883	Compound fracture of leg; kicked by a horse.	Plaster of Paris bandage applied. (Bracket.)	Recovery
XXXIV.	T. E.	40	March, 1876	Compound fracture of both bones of leg.	Amputation. (Primary.)	Recovery

COMPOUND FRACTURES OF THE LEG—*Continued.*

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
XXXV.	J. L.	45	Sept., 1883	Compound fracture of tibia and fibula.	Plaster of Paris bandage applied.	Recovery
XXXVI.	M. McC.	35	Aug., 1883	Compound fracture of leg.	Plaster of Paris bandage applied.	Recovery
XXXVII.	M. B.	35	Aug., 1880	Compound fracture of leg.	Plaster of Paris bandage applied.	Recovery
XXXVIII.	G. W.	18	Dec., 1883	Compound fracture of leg; alarming hæmorrhage.	Plaster of Paris bandage applied.	Recovery
XXXIX.	D. B.	30	Jan., 1876	Compound fracture of leg.	Placed in fracture-box with extension.	Recovery
XL.	W. W.	40	April, 1883	Compound fracture both tibia and fibula. Longitudinal fracture.	Plaster of Paris bandage applied with large fenestrum.	Recovery
XLI.	J. D.	50	Nov., 1883	Sequestrotomy. Medullary canal freely opened, with large wound.	Wound packed with strips of sheet lint.	Recovery
XLII.	T. M.	30	April, 1884	Sequestrotomy. Medullary canal of femur freely opened for 4 inches.	Wound packed with jute and Balsam of Peru poured into wound.	Recovery
XLIII.	G. R.	26	Feb., 1884	Compound dislocation ankle-joint; wound 5 inches long; foot right angles to leg.	Plaster of Paris bandage. Leg suspended in a swinging apparatus.	Recovery
XLIV.	J F.	45	June, 1881	Compound fracture of patella and lower end of femur.	Fragments removed. Plaster of Paris bandage applied.	Recovery
XLV.	P. D.	38	Oct., 1883	Compound comminuted fracture of tibia and fibula; also opposite ankle opened.	Stimulants administered.	Died within 14 hours
XLVI.	J. H.	30	May, 1884	Compound comminuted fracture of tibia and fibula, foot also crushed.	Stimulants administered.	Died within 12 hours
XLVII.	J. M.	30	May, 1884	Compound fracture of tibia and fibula.	Plaster of Paris bandage applied. No fenestrum.	Recovery
XLVIII.	B. McN.	35	May, 1884	Compound comminuted fracture of leg, both bones; 10 fragments.	Plaster of Paris bandage applied. Fenestrum cut.	Recovery
XLIX.	B. McN.	35	May, 1884	Compound comminuted fracture of tibia and fibula. This patient had both bones of both legs fractured.	Plaster of Paris bandage applied; fenestrum cut.	Recovery
L.	E. H.	30	Aug., 1883	Compound fracture opening into ankle-joint. All tendons exposed. Fracture astragalus.	Plaster of Paris bandage applied; fenestrum cut; slight movement in joint.	Recovery
LI.	E. W.	25	Nov., 1883	Compound fracture tibia and fibula.	Plaster of Paris bandage applied.	Recovery
LII.	H. C.	14	Oct., 1883	Compound fracture. Medullary cavity of bone opened to remove sequestrum.	Wound left open; simple dressing applied.	Recovery
LIII.	J. S.	53	Sept., 1883	Compound fracture of tibia and fibula.	Plaster of Paris bandage applied.	Recovery
LIV.	B. F.	15	May, 1884	Compound fracture tibia and fibula. Originally simple. Soft parts sloughed.	Plaster of Paris bandage applied immediately. Fenestrum cut.	Recovery
LV.	M. C.	52	May, 1884	Compound fracture of the tibia. End of bone protruded.	Plaster of Paris bandage applied. No fenestrum.	Recovery
LVI.	J. O. D.	42	May, 1884	Compound fracture of the tibia and fibula. Wound one and a half inch. Patient fell from a high tree.	Plaster of Paris bandage applied.	Recovery
LVII.	B. G.	30	May, 1884	Compound fracture of Leg. Fibula alone compound. Patient was struck by policeman's club while under arrest.	Plaster of Paris bandage immediately applied.	Recovery
LVIII.	J. Z.	40	May, 1884	Compound fracture of right leg; large wound. Comminuted fracture left leg; large wound extending up under patella; left arm broken; fell four stories.	Three plaster of Paris bandages at once applied. Patient had delirium tremens and was shackled. Is living while going to press, after 3 weeks.	Recovery

This table shows fifty-eight cases of compound fractures of the leg, all of which recovered, except two which died from shock within twelve hours after admittance into the hospital. In many of the cases the bones protruded through the wound and in three of these cases it was necessary to saw off with the hain-saw several inches of the projecting ends. Two of the cases were longitudinal fractures of the tibia splitting the long bone into halves. In these longitudinal fractures a horse-shoe tourniquet was applied, a device of my own as far as I know, to keep the long fragments in contact with each other. In a few cases a compound fracture was made, but no case is recorded where at least the end of the finger was

not introduced well into the medullary canal of the tibia or femur. Ten of the cases opened into the knee and ankle-joints. In a few the hæmorrhage was a very formidable symptom. One case was a double compound fracture of both bones of both legs. The wounds were large in both legs and in both legs several large pieces of bone were removed, amounting to four inches in one leg and three inches in the other leg. Considering the fact that the patient received a double compound fracture, that the wounds were large, that the loose pieces of bone were many, that the hæmorrhage was alarming, and that the patient not only recovered, but was out of bed sitting up in a chair upon the fourteenth day, without a bad symptom, it is one of the most remarkable cases ever published by any surgeon in this category. In another case there were two legs and one fore-arm fractured with a wound extending up under the patella. Patient jumped from the roof of a four-story building with intent to kill.

COMPOUND FRACTURES OF THE ARM.

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
I.	U. P. R.	20	April, 1883	Compound fracture of humerus, result of a gunshot injury.	Plaster Paris bandage applied.	Recovery
II.	A. M.	12	April, 1883	Compound fracture of humerus.	Plaster of Paris bandage applied.	Recovery
III.	M. D.	22	May, 1883	Compound fracture of carpal bones opening into wrist-joint, laceration of muscles, fore-arm and radial artery.	Amputation few inches below shoulder-joint during gangrene. (Secondary.)	Recovery
IV.	J.W.	16	May, 1883	Compound fracture of humerus, near shoulder-joint.	Plaster of Paris bandage applied.	Recovery
V.	D. D.	20	May, 1883	Compound fracture of humerus, near shoulder-joint.	Plaster of Paris bandage. Fenestrum cut.	Recovery
VI.	H. C.	35	May, 1883	Compound fracture of humerus, near shoulder-joint, result of a flag-staff falling upon patient from a height of 60 feet.	Plaster of Paris bandage applied.	Recovery
VII.	T. McD.	13	Sept., 1883	Compound fracture of humerus.	Plaster of Paris bandage applied.	Recovery
VIII.	J. H.	11	Aug., 1883	Compound fracture of humerus. Elbow-joint opened, bones protruded, serious hæmorrhage.	Plaster of Paris bandage applied.	Recovery
IX.	J. N.	30	May, 1884	Wired an un-united fracture; bones exposed and fragments sawn off.	Plaster of Paris bandage applied with fenestrum union.	Recovery
X.	J. T.	28	April, 1884	Gunshot fracture of head of humerus. Ball extracted.	Splint applied. Drainage-tube used.	Recovery
XI.	J. G.	30	Dec., 1883	Wired an un-united fracture humerus, near shoulder-joint.	Plaster of Paris bandage applied.	Recovery
XII.	B. B.	4	May, 1884	Compound fracture of humerus. Child fell from a 4-story building, also depressed fracture of skull with convulsions. Fracture of skull not compound.	Plaster of Paris bandage applied. Wound admitted the finger.	Recovery

This table records twelve cases of compound fracture of humerus. All of which recovered. In those cases where the joints were involved, recovery took place with little impairment in movement of the joint. One of the twelve cases, involved also the wrist-joint; another the elbow-joint, and another the shoulder-joint. Two of the cases were the result of gunshot injuries. These cases then of the arm were all of a serious character. In one of the cases of compound fracture of the humerus, there was a depressed fracture of the skull in a child. The patient had convulsions, but these disappeared when the overlapping was replaced and the indentation was rectified.

COMPOUND FRACTURES OF THE FORE-ARM.

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
I.	J. W.	12	Oct., 1882	Compound comminuted fracture of radius and ulna.	Plaster of Paris bandage applied.	Recovery
II.	L. S.	14	May, 1883	Compound fracture wrist-joint. Opened, tendons torn and divided.	Amputation of fore-arm. (Primary.)	Recovery
III.	J. G.	20	March, 1875	Compound fracture radius and ulna opening into elbow-joint.	Amputation of arm. (Primary.)	Recovery
IV.	D. H.	20	May, 1883	Compound fracture of radius and ulna.	Amputation circular flap. (Primary.)	Recovery
V.	G. H.	20	Aug., 1883	Compound comminuted fracture of radius.	Plaster of Paris bandage applied.	Recovery
VI.	T. McC.	20	April, 1883	Compound fracture of ulna.	Plaster of Paris bandage. Patient had an attack of erysipelas. Patient admitted into ward with facial erysipelas.	Recovery

COMPOUND FRACTURES OF THE FORE-ARM—*Continued.*

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
VII.	A. S.	24	May, 1883	Compound fracture of fore-arm; gangrene; vessels divided.	Amputation. (Secondary.)	Recovery
VIII.	J. O. B.	42	June, 1883	Compound comminuted fracture of radius and ulna with extensive burns.	Stimulants.	Died within 24 hours
IX.	J. B.	10	April, 1883	Compound fracture. Radius and ulna, bones protruded.	Wound washed out; 1-40 solution carbolic acid; splint.	Recovery
X.	C. H.	40	April, 1883	Compound comminuted fracture of radius and ulna. Extensive laceration.	Wound irrigated; carbolic acid; several kinds of splints applied.	Recovery
XI.	G. T.	30	Sept., 1882	Compound comminuted fracture of fore-arm with laceration of tendons.	Amputation. (Primary.)	Recovery
XII.	H. T.	13	May, 1884	Compound comminuted fracture of radius and ulna.	Plaster of Paris; no fenestrum; patient about ward.	Recovery
XIII.	J. N.	19	May, 1884	Compound comminuted fracture into wrist joint. Radius fractured.	Dressed with wooden splint and irrigation.	Recovery
XIV.	M. McD.	28	May, 1884	Compound comminuted fracture meta-carpal bone, also styloid process of radius; joint opened wide and filled with persulphate of iron before admittance.	Plaster of Paris bandage.	Recovery

This table records fourteen cases of compound fractures of the fore-arm, all of which recovered except one case, which died from shock within twenty-four hours, and which had in addition to his fracture severe burns of the 1st, 2d and 3d degrees. Of the remaining thirteen cases, three of them opened into the wrist-joint and one into the elbow-joint.

COMPOUND FRACTURES OF THE LOWER JAW.

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
I.	R. B.	21	June, 1883	Compound fracture lower jaw, produced by kick of a horse.	Wound enlarged and cleaned. The fragments were united by silver wire.	Recovery
II.	M. P.	28	June, 1883	Compound fracture lower jaw, result of a blow.	Wound cleansed and enlarged. Fragments sutured by silver wire.	Recovery
III.	F. F.	14	Sept., 1883	Compound fracture upper and lower jaw, also simple fracture of thigh. Fall of 80 feet.	Retentive apparatus. Plaster of Paris to thigh.	Recovery
IV.	A. H.	55	Aug., 1883	Compound fracture lower jaw at dental foramen. Two teeth wedged in between fragments.	Barton's splint. Mouth washed every few hours with carbolic acid and water.	Recovery
V.	H. W.	30	May, 1883	Double compound fracture of lower jaw.	Barton's bandage applied, also a cork between the two rows of teeth	Recovery
VI.	F. F.	12	Sept., 1883	Compound fracture of lower jaw, simple fracture of thigh, also tibia and fibula.	Retentive apparatus to jaw, also a cork. Plaster of Paris to thigh and leg.	Recovery
VII.	J. F.	20	June, 1883	Compound fracture of lower jaw.	Retentive apparatus, also cork. Mouth rinsed out at frequent intervals.	Recovery
VIII.	S. M.	25	Dec., 1875	Compound fracture of lower jaw. Great displacement. Kicked by a vicious horse.	Patient was placed under ether to reduce the fragments. A leather splint applied also.	Recovery
IX.	F. W.	14	May, 1884	Pistol shot injury upper jaw.	Wound scaled.	Recovery

This table shows nine cases of compound fractures of the lower and upper jaws, in all of which the injuries were of a severe character. In two of the nine cases the fragments were reduced and silver sutures were introduced to keep the fragments in coaptation. In two of the remaining seven, the thigh was fractured in addition to the compound fracture of the jaw, and the leg was also fractured in one of the two cases just mentioned. One case was a pistol-shot wound of superior maxilla with comminution of the fragments.

COMPOUND FRACTURES OF THE FINGERS AND TOES.

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
I.	W. F. K.	44	May, 1883	Lacerated and contused wound of foot produced by a loaded truck passing over foot causing compound comminuted fracture.	Foot bandaged to wooden splint; treated openly; balsam of Peru.	Recovery
II.	M. K.	20	May, 1883	Compound comminuted fracture meta-carpal bones. Amputation part of hand.	Treated openly; hand on Palmar splint.	Recovery
III.	W. K.	24	May, 1883	Compound fracture of all toes, joints of meta-tarsus opened. Gangrene.	Splint; toes allowed to granulate; balsam and other stimulating applications employed.	Recovery
IV.	R. G.	20	Feb., 1883	Compound fracture of fingers. Contusions.	Primary amputation of injured part.	Recovery
V.	T. C.	16	Sept., 1883	Compound fracture of middle phalanx.	Wooden splint; treated openly to granulate.	Recovery
VI.	C. H. P.	42	Sept., 1882	Compound dislocation; joints all open; circular saw injury.	Amputation middle finger; conservative treatment in other fingers.	Recovery
VII.	J. H.	30	May, 1883	Compound comminuted fracture of phalanges.	Wooden splint; wound treated openly to granulate.	Recovery
VIII.	R. G.	16	Sept., 1883	Compound comminuted fracture 1st 2d and 3d fingers; tendons torn; lacerated wound.	Primary amputation; healed by granulation.	Recovery
IX.	A. R.	20	May, 1883	Compound comminuted fracture meta-tarsal bone. Railway car wheels passed over foot; wound 4 inches in length to tarsal bones.	Wooden splint; treated openly; allowed to granulate, useful foot.	Recovery
X.	J. H.	22	Dec., 1875	Compound fracture of meta-tarsal bone.	Wooden splint; wound treated openly; good result.	Recovery
XI.	J. M.	27	April, 1880	Compound fracture of toes.	Wooden splint, jute, balsam, treated openly.	Recovery
XII.	S. H.	60	Sept., 1882	Compound fracture of meta-tarsal bones.	Wooden splint, jute, balsam, treated openly.	Recovery
XIII.	J. M.	18	Sept., 1883	Compound comminuted fracture toes.	Wooden splint, jute. Balsam of Peru; treated openly.	Recovery
XIV.	J. C. H.	45	Sept., 1883	Compound comminuted fracture fingers.	Wooden splint. Balsam of Peru; treated openly.	Recovery
XV.	P. McV.	52	April, 1884	Compound comminuted fracture toes. Foot badly crushed. Patient had a bad bed-sore.	Wooden splint. Balsam and iodoform; treated openly.	Recovery
XVI.	J. R.	16	April, 1884	Compound fracture thumb and meta-carpal bone.	Primary amputation. Wound healed nicely.	Recovery
XVII.	J. O. B.	30	April, 1884	Compound fracture of great toe; foot contused.	Plantar wooden splint; jute, iodoform; treated openly.	Recovery
XVIII.	J. L.	65	May, 1882	Compound fracture meta-tarsal bone, and compound dislocation of great toe.	Wooden splint; iodoform, jute; treated openly.	Recovery
XIX.	M. C.	14	May, 1882	Resection and gouging os-calcis; large wound opening on both sides of foot.	Plaster of Paris bandage applied: fenestrum cut; treated openly.	Recovery
XX.	J. F.	21	May, 1884	Compound comminuted fracture of fingers; amputation of one finger, the remaining left to granulate.	Wooden splint; simple dressings.	Recovery
XXI.	J. C.	45	May, 1884	Compound fracture of three fingers; amputation of one finger.	Wooden splint; simple dressings.	Recovery

Here are 21 compound fractures of the hand and foot. All of these cases were complicated by great crushing and laceration of the soft parts, produced by railway injuries, circular saws, or by the falling of heavy weights. The joints were opened, and the bones were comminuted, the tendons exposed and the soft parts badly lacerated and contused. Although these compound fractures, on account of the peculiar nature of the accidents, were troublesome to treat, I shall in accordance with writers in general, exclude these twenty cases from the final list, remarking, however, that they all recovered.

There are twelve miscellaneous fractures which were compound, and some complicated with other injuries. Eight of the cases were of the lower and upper jaw, and were all serious injuries. Four were of the ribs and nasal bones. All of these compound fractures recovered. I have inserted these compound fractures because they have been more troublesome to treat, and have given me greater anxiety than the other fractures.

Finally, to recapitulate, there are in all 144 cases of compound fractures, of which number 23 are of the skull, 3 are of the thigh, 58 are of the leg, 12 are of the arm, 14 are of the fore-arm, 9 are of the upper and lower jaws, 21 are of the hand and foot, 4 are of the ribs and nasal bones. Total—144.

COMPOUND FRACTURES OF RIBS AND NASAL BONES.

NO.	NAME.	AGE.	DATE.	INJURY.	TREATMENT.	RESULT.
I.	T. B.	33	Sept., 1883	Compound fracture of two ribs, with considerable hæmorrhage.	Wound cleansed; adhesive plaster applied, and collodion, opium.	Recovery
II.	J. T.	30	Aug., 1882	Compound fracture nasal bones, with displacement and hæmorrhage.	Fragments reduced, and simple dressing applied.	Recovery
III.	M. T.	65	April, 1884	Compound fracture of nasal bones; two wounds leading down to fracture; severe hæmorrhage and shock.	Wound cleansed; fragments reduced; wounds sealed.	Recovery
IV.	J. A.	45	Dec., 1878	Compound fracture nasal bones; result of a blow from a heavy club.	Fragments reduced, which were comminuted; wound cleansed.	Recovery

Now following the example of surgical writers, who have carefully tabulated the results of treatment in compound fractures, I shall eliminate all those cases in which primary amputations were performed, because they do not concern the point at issue, but add the important fact that all the cases upon which any amputation was performed in compound fractures recovered without an exception; and, I shall also, according to the practice of all writers, reject all those cases which died of hæmorrhage, collapse, shock, etc., within forty-eight hours, although most of cases died within a few hours after injury. I shall also leave out all those cases of compound fractures of the hand and foot, remarking, however, that all these cases recovered and the results are as follows:

Deducting 21 cases of compound fractures of the hand and foot, and 14 cases of primary amputations, and 9 deaths which occurred within 48 hours or less from shock, there remain 100 consecutive, and of course unselected compound fractures, occurring in three large metropolitan hospitals without a death.

I have still other successful cases with which to begin my second series of one hundred cases of compound fractures, and I hope to report these cases at a future meeting of this Association.

In conclusion, gentlemen, let us compare the results of the treatment of compound fractures by the simple, open method already described, with that obtained by the true Listerian method.

In the *Boston Medical and Surgical Journal*, Hodges reports 19 cases of compound fractures treated strictly according to Lister's method with no deaths.

Lo Grasso reports 25 cases of compound fractures treated by Albanese under strict Listerian method with no deaths. Black, in the *Edinburgh Medical Journal*, reports eight cases of compound fractures treated *a la* Lister with no deaths.

Sir William McCormac reports 16 cases without a death, and refers to his 45 cases of compound fracture in St. Thomas' Hospital, which fractures were made by the surgeon. Vollkman reported at the International Congress, in London, 75 cases of compound fractures treated under the most rigid Listerian method without a death. These cases are reported by different surgeons throughout the world as the results obtained by a rigid adherence to the Listerian method. The results are brilliant beyond description. Sir Joseph Lister reports in his list 97 cases with two deaths.

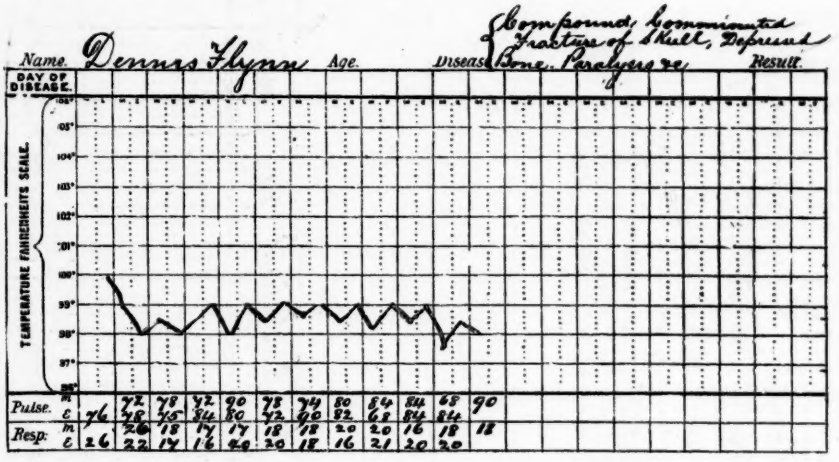
Finally, in *Billroth und Luecke Deutsche Chirurgie*, published in 1882, in Lieferung 27, 1. Hälfte, is a most exhaustive treatise on fractures by Prof. Dr. P. Burns. He has made a table of compound fractures in which there is an analysis of 254 cases which were treated by Listerian method. Of these 254 cases, 224 cases were treated conservatively, (*i. e.*, without interference by operation or resection, etc.) and 30 were obliged to submit to amputation or resection. Of the 224 treated conservatively, 14 died, and of the 30 operated upon, 9 died, making a total of 23 or 9 per centum of all the cases from all causes. Excluding such cases of deaths which occurred from causes entirely disconnected with any plan of treatment; (e.g.) collapse, fat embolism, hæmorrhage from rupture of the liver, each 1, delirium tremens 7, tetanus 2; there remain 11 cases, which died of septo-pyæmia, a percentage of 4.3 (four and three-tenths). Owing to 2 of these 11 cases having manifested general septic infection before they came under treatment, they may for statistical purposes be eliminated, thus giving a mortality of 9 or 3.5 per centum, (three and five-tenths.)

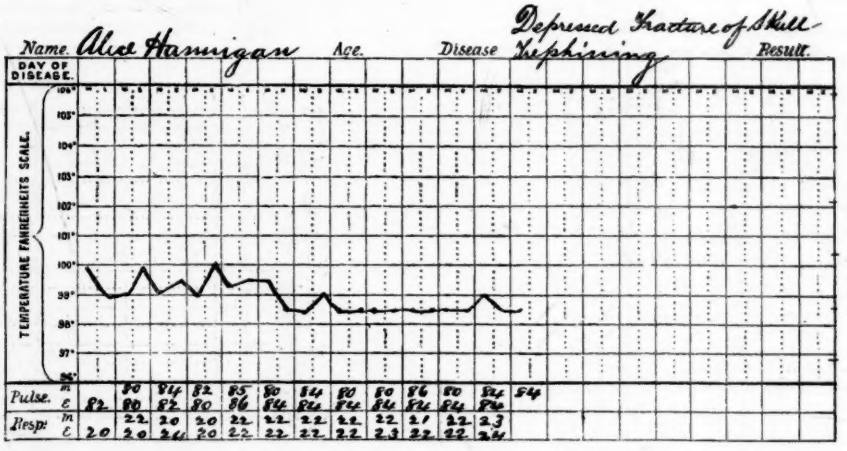
To make a summary, there were 254 cases of compound fractures, and excluding the deaths not connected with the plan of treatment, there is a death-rate of 3.5 per centum from septo-pyæmia.

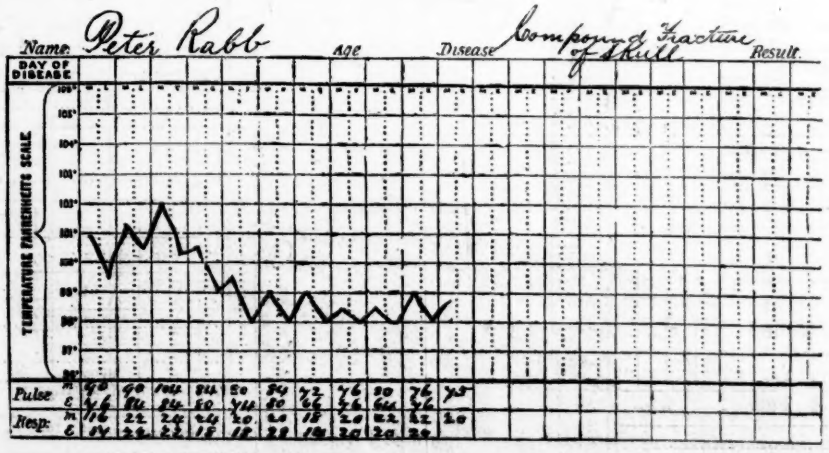
The results obtained by this simple and uncomplicated method which can be employed by any one without the ready facilities of a hospital, or by any one who has no opportunity to obtain special dressings, compare most favorably with any statistics yet published. In bringing these 144 cases before the meeting of the American Medical Association, and in offering them as a clinical contribution, I do not wish it to be understood that I under-value antiseptic surgery. On the contrary, I am a great advocate for, and believer in, those principles of antiseptic surgery, which have been so emphatically enunciated by the renowned Lister. I only contend that the same results can be obtained by other and simpler methods, which are within the reach of all. The aim of this paper is to maintain that cleanliness is the *sine qua non* for surgical success, and that wounds and compound fractures can repair kindly and quickly without danger though exposed to the air. The open treatment of wounds of a certain character is after all the highest type of antiseptic surgery. These serious wounds will heal kindly when the surgeon acts well his part. There are certain wounds and

certain injuries which repair best without primary intention, although I obtain primary intention in osteotomies, in the major amputations, in excision of large tumors and other capital operations. I believe thoroughly in the germ theory, but I contend that these germs are for the most part harmless unless a wound is foul and unhealthy, for which condition the surgeon should hold himself responsible. The presence of air *per se* in a wound will excite no dangerous complication unless the wound is in an unhealthy condition. If the surgeon affords nature her prerogative and acts his part, there is no reason why a wound, and especially a compound fracture, should not repair kindly, quickly and satisfactorily.

In conclusion I invite your attention to some of the temperature charts which I have selected at random from the entire number which lie before you upon the table. They are all here for your examination.


Name. Dennis Flynn Age. Disease Compound, Comminuted Fracture of Skull, Depressed Bone, Paralysis &c. Result.
DAY OF DISEASE.
TEMPERATURE FAHRENHEITS SCALE.
Pulse.
Resp.





Name. Michael Davis Age. Disease. Compound Fracture of Skull Result.

DAY OF DISEASE.

TEMPERATURE FAHRENHEITS SCALE.

Pulse.	m	128	90	100	92	108	90	90	108	90	90	95	72
	e	96	88	90	96	84	82	84	84	72	85	90	68
Resp.	m	20	20	22	20	22	24	18	18	18	18	18	18
	e	22	20	18	24	20	20	18	18	16	22	22	22

Name. Bridget Conolly Age. Disease. Compound Fracture of Skull Result.

DAY OF DISEASE.

TEMPERATURE FAHRENHEITS SCALE.

Pulse.	m	105	108	100	102	95	92		
	e	96	86	90	90	85			
Resp.	m	24	24	26	26	26	22	21	20
	e	24	26	26	24	23	23	24	

Name. Thomas Patterson Age. Disease. Compound Fracture of Thigh with contusions of opposite Thigh Result.

DAY OF DISEASE.

TEMPERATURE FAHRENHEITS SCALE.

Pulse.	m		72	90	95	95	102	102	82	86	92	97	90	90	96	92	90	96	84	86
	e	96	95	90	96	96	90	96	86	86	96	96	86	86	96	90	97	90	100	108
Resp.	m		23	20	23	20	24	23	18	18	23	22	22	24	23	23	23	24	24	20
	e	26	20	23	20	23	18	20	20	20	20	22	20	22	22	22	22	23	23	

Name. Hugh Reiley Age. Disease. Compound Comminuted Fracture of Skull. 20 pieces of Bone removed. Result. D

DAY OF DISEASE.

TEMPERATURE FAHRENHEITS SCALE.

Pulse.	m	66	76	76	77	72	73	73	71	75	72	75	75	75	75					
	e	66	72	76	68	75	72	72	75	71	75	72	75	76	72					
Resp.	m	20	20	23	23	22	23	22	23	23	23	25	23	23	23					
	e	24	23	22	25	23	22	22	21	21	23	24	25	23						

Name John Deans Age Disease Compound Fracture of Leg Result

DAY OF DISEASE

TEMPERATURE FAHRENHEITS SCALE

| | | |

Name. Henry Clark Age. Disease. Compound Fracture of Humerus Result.

DAY OF DISEASE.

TEMPERATURE FAHRENHEIT'S SCALE.

Pulse.	m										84	98	84	80	72	74	68	65	68	75	60	70	62							
	c									100	80	81	90	75	84	76	110	76	65	65	62	66	64							
Resp.	m										26	29	35	23	20	23	17	20	20	18	18	17	17							
	c									30	20	24	29	22	32	22	22	20	18	18	14	17	17							

Name. August Detzel Age. Disease. Compound Fracture of Le g, involving Ankle Joint Result.

DAY OF DISEASE.

TEMPERATURE FAHRENHEIT'S SCALE.

Pulse.	m	102	110	124	118	116	118	110	108	100	98	105	96	92	96	98	95	90	98	90	98									
	c	96	120	116	116	116	116	115	98	92	Very	95	90	82	95	92	95	88	95	92	92									
Resp.	m	28	28	26	30	29	30	29	28	24	28	28	26	28	24	24	24	24	26	28	26									
	c	24	28	29	30	29	31	29	29	29	28	26	28	28	26	28	26	26	26	29	27	28								

Name. D. L. Deans Age. Disease. Compound Fracture of Arm Result.

DAY OF DISEASE.

TEMPERATURE FAHRENHEIT'S SCALE.

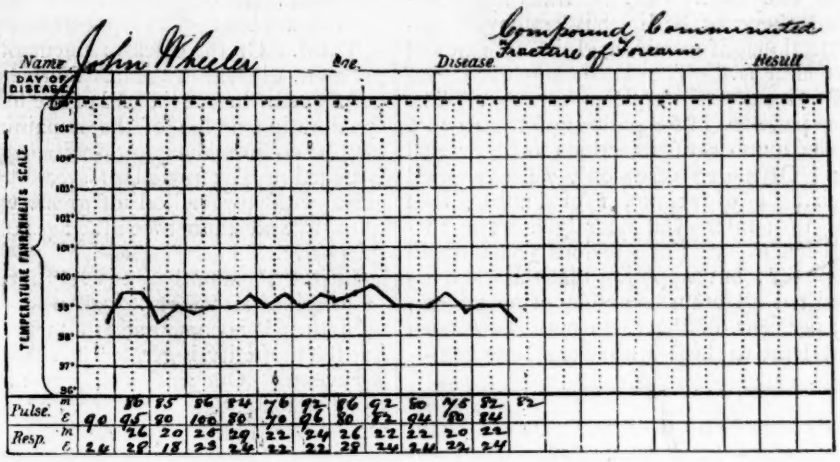
Pulse.	m			98	86	84	74	64	82	80	78	78	66	78	60															
	c	92	108	82	86	72	92	92	92	82	80	78	68	68																
Resp.	m			18	24	19	18	18	18	18	17	19	17	18																
	c	22	22	20	20	18	19	20	18	17	17	17	16																	

Name. Paul Green Age. Disease. Compound fracture of Humerus near shoulder joint, produced by firing an unlimbered fracture Result.

DAY OF DISEASE.

TEMPERATURE FAHRENHEIT'S SCALE.

Pulse.	m	103	90	94	83	87	97	97	86	97	83	93	84	80	84	83	84	83												
	c	118	100	91	87	92	90	85	87	87	96	94	88	88	92	88	84	82												
Resp.	m	24	24	22	23	24	23	24	23	24	26	25	30	22	22	22	22	22												
	c	27	24	22	24	24	24	23	26	26	28	24	23	22	20	22	22	22												



MEDICAL PROGRESS.

ANATOMY AND PHYSIOLOGY.

THE DISTRIBUTION OF UREA IN THE BLOOD.—Gréhant and Quinquaud have undertaken an investigation into the amount of urea in the blood, of which the first instalment has just been communicated to the Society of Biology, of Paris. The main object of the inquiry is to determine the source of the urea. In the first place, they have ascertained the relative quantity of urea in blood *going to* and *coming from* the periphery, and afterwards they have determined the relation between that of arterial blood and that in the abdominal veins. Their figures show (1) that there is about the same quantity of urea in the blood returning from as in that going to the periphery, from which we may conclude that any urea which may be formed there must be carried to the centre of the circulation by the lymphatics; and (2) that the blood coming from the spleen and the liver is always considerably richer in urea than the arterial blood, especially during digestion. The difference may be as much as 9 milligrammes in every 100 grammes of blood in this condition, and if we suppose that 100 grammes of blood come from the liver every minute, carrying an excess of 9 milligrammes of urea, it gives 540 milligrammes per hour, or 13 grammes in 24 hours. On the other hand, if the animal is fasting the difference may only be 3 milligrammes per 100 grammes, which, on the same supposition as to blood-flow, gives 180 milligrammes per hour, or 4.32 grammes per day.—*Comptes rendus, Edin. Med. Jour.*

MOTOR FIBRES IN THE CARDIAC PORTION OF THE VAGUS.—Wedenskü has made some telephonic researches into the heart-sounds, which seem to point to the existence of motor filaments in the cardiac branches of the pneumo-gastric nerve. The heart of a dog was connected by means of two needles with a telephone, and on listening, the normal heart-sounds were heard. The vagus was then stimulated with a weak current, which only showed the rate of the heart's action, and a series of short sounds could be heard, accompanying the normal sounds. When the electrical stimulus was augmented in strength, so that the heart was stopped, nothing could be heard. After the injection of atropia by the jugular vein, to paralyze the inhibitory fibres, these sounds could be produced by any strength of current; and on the other hand, after the administration of curara to paralyze the motor fibres, no sounds could be caused by stimulating the vagus. From these facts Wedenskü concludes that there must be in the pneumo-gastric nerve some sort of motor control over the heart.—*Centralbl. für die Med. Wissenschft.—Edin. Med. Jour.*

A NEW FUNCTION OF THE RED CORPUSCLES.—Fano has studied the manner in which peptone is altered after being injected into the blood of animals. It is a well-known fact that it cannot be detected half an hour after injection, and by very careful investigation he thinks he has proved that the red corpuscles have the power to transform the peptone into globulin. The corpuscles, after a certain time, give up the globulin to the tissues, and thus form a nutritive reserve. We may liken the process to the glycogenic function of the liver cells.—*Sperimentale, Edin. Med. Jour.*

MATERIA MEDICA AND THERAPEUTICS.

IODOFORM IN ERYSIPELAS.—Mr. C. Clark Brennan, in the *Practitioner*, relates his success with this agent in erysipelas, which was, as he puts it, an accidental discovery. He gives four cases treated with iodoform collodion, a mixture of one part of iodoform to ten of collodion. Its prompt relief of the burning pain, which is such a constant symptom of erysipelas, its apparent power of arresting the progress of the disease and the remarkable freedom from irritation during the period of desquamation following the subsidence of the disease, are all strong reasons in favor of its extended use.

OSMIC ACID TREATMENT OF PERIPHERAL NEURALGIA.—Dr. Eulenberg, of Berlin, has employed subcutaneous injections of osmic acid in 29 cases of peripheral neuralgia. The dose employed was 7 minims of a 1 per cent. aqueous solution. The treatment was persisted in for periods of from 1 to 6 weeks, and the number of injections made varied from 3 to 14. Of the 29 cases only 7 are reported as cured, viz., 4 of sciatic, 1 of lumbar, 1 of brachial, and 1 of intercostal neuralgia. The success has not been as great as previous trials would lead us to hope for; but supposing that the whole 29 cases had resisted all other methods of treatment, success in 25 per cent. of the cases must have been gratifying, at least to those who were benefited.—*Medical Press.*

THE BENZOATE OF SODIUM IN THE SUMMER DIARRHŒA OF CHILDREN.—Dr. R. Guaita (*Gaz. degli Ospitali Bull. Gen. de Therap.*) considers the summer diarrhœa of children as a zymotic disease, caused by the presence of a special microbe introduced from without, or developed in the alimentary canal during digestion. A deficient diet, bad hygiene, excessive heat being the predisposing causes. With this idea he employs the benzoate of sodium, which has already been used to advantage by Kapuscinsky and Zilewiez in the vomiting and diarrhœa of children, as being anti-fermentative and modifying the intestinal mucous membrane.

Dr. Guaita used the benzoate of sodium alone and without any other treatment in 53 cases of children, varying in age from 6 months to 2 years. In 35 of these cases the affection was 24 to 30 hours old; in the other 18 it dated from 6 to 14 days. With the first he produced perfect relief always in from 4 to 8 days; with the second, after about 21 days, without a single death in either.

After the use of a purgative (calomel, jalap), he gave from 4 to 6 grammes of the benzoate of sodium in 100 grammes of water during the 24 hours, and continued its use for 2 days. The third day he gave a slight purgative (magnesia, manna), followed by a repeated use of the benzoate. At the end of 2 days an improvement in the character of the stools was very noticeable, with but little fœtid character, and a checking of the vomiting. During treatment the child is strictly dieted, only taking a little lemonade and a few spoonfuls of good wine. Milk and soup are absolutely interdicted, as Dr. Guaita finds that milk, particularly that of the cow, ferments readily in the stomach, and increases the trouble. Children at the breast are allowed to nurse 4 times in 24 hours.

MEDICINE.

THE PATHOLOGY OF PNEUMOTHORAX.—Dr. Samuel West gives in the *Lancet* an analysis of the records of the City of London Hospital for Diseases of the Chest, extending over a period of twenty-eight years, as a contribution to the pathology of this disease. He finds: First, that 90 per cent. of all the cases are attributed to phthisis.

Second. About 5 per cent. of all deaths from phthisis are the result of pneumothorax.

Third. Of the cases of pneumothorax, about 75 per cent. die within the first fourteen days, and about 90 per cent. before the end of the first month, though the duration of life of the remaining 10 per cent. may be considerable.

Fourth. The period of greatest frequency coincides with the period of greatest mortality from phthisis, and lies between the ages of twenty-five and thirty-five.

Fifth. Pneumothorax is very rare before the age of fifteen or after forty.

Sixth. It is commoner in men than in women, but the mortality is greater in women.

Seventh. One side of the chest is not more prone to be attacked than the other, nor does the side attacked modify the prognosis.

Eighth. Effusion commonly occurs, though not necessarily. It is not necessarily purulent; in fact, serous, sero-purulent, and purulent effusions are of about equal frequency, though in cases of long duration, an effusion which was serous to begin with often becomes purulent.

Ninth. The chances of effusion being present, and of that effusion being copious and probably also purulent, increase with the duration of the case; but effusion may be absent throughout, or be scanty in old cases and copious in recent cases, or, whether large or small, remain serous throughout or be purulent from the commencement.

Tenth. The perforation is found in about two-thirds of the cases, and may be discovered even in cases of long standing. It is usually single, but may be multiple. It is generally circular in shape. Its size is commonly small, two or three lines; but occasionally it is large, even an inch or more in diameter. Its favorite position is in the upper lobe, where it occurs nearly twice as frequently as elsewhere, and in the mid-lateral region.

Eleventh. There is, lastly, no relation between the amount of lung disease and the occurrence of pneumothorax.

CYSTICERCUS OF THE BRAIN.—In the March number of the *Archives de Neurologie*, M. Bernard records a case of this somewhat rare affection. The patient was a man, aged 24 years, who had suffered from attacks of headache and vomiting for a year when he came under observation. These attacks were accompanied by vertigo and transient loss of vision. Latterly the headache had become constant; there was no loss of motor power, but the patient staggered in walking, and complained of numbness in the right side of his face and tongue. There had also rapidly ensued impairment of vision. On examination, there was marked retraction of the field of vision, especially on the right side; his color fields could not be taken; the visual acuity was much diminished on the right side. The pupils were dilated, and very sluggish both to light and during accommodation; there was a typical "choked disc" on each side. After his admission to the Salpétrière the vomiting was checked, but he suffered much from head-

ache and from vertigo, and he gradually became quite blind. He died from double pneumonia. At the necropsy, a small sac was found just in front of the optic commissure, but not having any direct relations to it; a second sac was seen depressing the second frontal convolution on the left side; and a third embedded in the wall of the fourth ventricle, on a level with the left eminentia teres. There was evidence of inflammation of the ependyma here, and a general increase of cerebro-spinal fluid. It is to this third cyst that the author would attribute all the symptoms observed. The cysticercus which was found in it, measured five millimeters in length, four in width, and three in depth.—(*Medical Times.*)

A Vibrio Observed During Measles.—M. J. A. LeBel (*Journ. de Méd. de Paris*) reports that he has observed in the urine, during measles alone, the appearance of a slightly-curved rod, very refracting, and endowed with very slow movements. The length varies considerably, so that the observer sees them of every appearance, from that of the typical vibrio to that of the bacteria.

In the case of ordinary measles this vibrio only appears in the urine during a few days, and disappears almost simultaneously with the appearance of the fever and swelling of the face. He has observed, in the case of an infant, on the second day of the eruption, the vibrio and spores; the protoplasm which enveloped them disappeared very rapidly.

The naturally acid urine is a favorable soil for this micro-organism; it may be found in abundance in the vessels in which the urine is placed, distributed in the mass of the liquid. It is well, if one wishes to judge of the intensity of any particular attack, to examine each specimen of urine as it is passed.

This vibrio makes its second appearance at the desquamative stage; at that time, also, it is easy to recognize it. The skin may be scraped, and the scales placed first in sterilized water and then in sterilized urine; within twenty-four hours large numbers of the micro-organism may be seen. In severe and persistent cases it re-appears in the urine and on the skin for weeks and even months.

LeBel states that he has been extremely careful in his observations, and has no reason to think that they are not correct.—*Midland* (*Med. Miscellany.*)

Scarlet Fever of the Fœtus in Utero, and of the Mother at the Ninth Month of Pregnancy.—Dr. Charles A. Leale, of New York, has recently read (*Medical News*) a paper on this subject before the New York County Medical Association, in which he gives a brief review of the literature of this disputed subject. He was further stimulated to do so after reading an article on the subject in this Journal, on page 432. He makes the distinction between septicæmia and scarlet fever to be as marked as between measles and small-pox, and after a thorough and interesting review of the subject comes to the following conclusions:

Scarlet fever may attack the fœtus in utero.

The large proportion of children born with scarlet fever recover.

Scarlet fever of the newly born child has like manifestation as when it occurs later in life.

Scarlet fever may attack the woman during pregnancy and also immediately after childbirth.

Scarlet fever is exceedingly fatal to the woman during pregnancy and during parturition.

Scarlet fever rarely, if ever, affects the parturient woman if she has had a previous attack.

Scarlet fever causes death in the parturient woman by coma, exhaustion, or by convulsions.

Scarlet fever, being a self-limited disease, is best treated by relieving dangerous symptoms, and in accordance with the rules of hygiene.

Scarlet fever only exceptionally occurs during the ages that women bear children; therefore, the proportion of those liable to contract the disease during pregnancy and childbirth, must necessarily be small.

Scarlet fever and septicæmia are distinct diseases, being unlike in many respects.

This paper, by Dr. Leale, excited a good deal of discussion in the Association, and the discussion was of a character to support his conclusions. Dr. Dwyer had seen one case of scarlatina in the parturient woman, in which the mother suffered from violent eclampsia and expired at the moment of the birth of the child. He had, however, met with three cases in which pregnant women nursed children having scarlet fever, who escaped the disease themselves and whose infants, when born, did not have it.

Dr. Detmold and Dr. Gouley dwelt upon the condition of the kidneys in pregnancy, making the liability to scarlatina of peculiar interest, as, if the disease were recovered from, there was imminent danger of their being affected with permanent nephritis.

Dr. Lusk considered the subject at some length. He thought it best not to run any risks, mentioning the case of a practitioner with a very large obstetric practice, who from the very unfavorable results, was forced to the conviction that he had been carrying infection directly from his scarlet fever patients to his parturient women. Scarlatina in the parturient woman, as a rule, he believed, was not associated with inflammation of the peritonæum or with pelvic celilultis. As to the possibility of the occurrence of a scarlatinous rash due to puerperal septicæmia, and entirely independent of the infection of true scarlatina, he had his doubts, as the exanthemata occurred sometimes without rash, and scarlet fever sometimes occurred without the throat symptoms. Braxton Hicks in his researches, maintained that there were cases of puerperal septicæmia without the ordinary signs of scarlatina which were in reality due to this disease; but of 68 cases of puerperal disease seen in consultation by Hicks, no less than 37 were distinctly traced to the scarlatinal poison. Of these, 20 had the characteristic rash of the disease; but the remaining 17, although the history clearly proved exposure to the contagion of scarlet fever, showed none of its usual signs, and were not to be distinguished from ordinary typical cases of the so-called puerperal fever.

SURGERY.

A NEW SPONGE.—Sampson Gamgee, in the *Lancet*, describes a sponge made of curled cocoanut fiber, which will take up sixteen to eighteen times its own weight of blood or water, which when squeezed out still leaves it elastic and absorbent, readily filling and swelling out again, when dipped in liquid and squeezed, a number of times in succession. To make this permanently antiseptic, he encloses within an absorbent cotton nucleus a very thin ball or capsule, containing the antiseptic of any kind, and, within certain limits, in any quantity desired; the antiseptic to be set free by cracking the capsule with a squeeze, just before using the sponge.

ON THE SURGICAL TREATMENT OF VARICOCELE.—M. Hache (*Annales des Maladies des Organes Genito-Urinaires*) gives two cases illustrating the treatment of this disease by Prof. Guyon, who combines the ligature of the veins with a resection of the scrotum. The patient being anæsthetized, the scrotum shaved and washed with a 20 per cent. phenic solution, the boundaries for an elliptical incision greatest in its transverse diameter, are traced out upon the skin; the dimensions varying according to the volume of the varicocele, and the degree of flaccidity of the skin, after prolonged rest has diminished the size of the tumor. In one of these cases, where the affected side was 9 centimeters in its transverse (from the exterior to the posterior raphes of the scrotum) and 4 centimetres in its long diameters in excess of the sound side, M. Guyon made an incision 25 millimetres in length in the vertical, and 7 centimetres in the transverse diameter. After removing the skin, the common fibrous tunic is exposed, with the tunica vaginalis just beneath it. Then the anterior venous plexus is to be ligated without opening the tunica vaginalis, by passing a curved needle or grooved sound behind the venous plexus, after isolating the vas deferens. Two ligatures are then applied, which are separated from each other as far as possible. This avoidance of opening the tunica vaginalis except for the passage of the ligatures, M. Guyon considers as of great value, and as simplifying greatly the operation. After proceeding thus far with the operation, it only remains to close carefully the lips of the cutaneous incision, with antiseptic washing, etc. It is preferable to leave a small drain at one of the angles of the wound for twenty-four to forty-eight hours.

This operation embraces four points:

First. An elliptical incision, with its greatest diameter transverse, of the skin of the anterior portion of the scrotum.

Second. Ablation of the portion circumscribed by this incision.

Third. Double ligature of the anterior venous plexus of the cord, through the non-incised tunica vaginalis and common fibrous tunic.

Fourth. Suture of the skin.

OBSTETRICS AND GYNÆCOLOGY.

MENOXENIA—A YOUNG GIRL 17 YEARS OF AGE MENSTRUATES BY THE LEFT BREAST.—Dr. Rouxeau gives, in the *Gazette Médicale de Nantes*, the account of a young girl, of medium size, apparently in excellent health, who consulted him from the fact that she had never lost any blood through the ordinary natural passages, but that for four or five months she had a discharge of blood at regular fixed periods from the left breast, which continued for three or four days. At other times than the menstrual period the two breasts were similar. When seen by Rouxeau at the menstrual period, her chest-linen was bloody, her left breast covered with blood and a third larger than the right—the nipple being prominent and turgescent. The blood oozed from the nipple.

THE RELATIONS OF EPILEPSY TO PREGNANCY AND LABOR.—Dr. Raoul Béraud (*Archives de Tocologie*) gives the results of his observations in forty-six cases, taken from various writers and from his own experience, with the view of ascertaining the asserted injurious effects of the alkaline bromides upon the fœtus when taken by the pregnant woman, and the asserted curative influence of marriage upon epilepsy. He arrives at the following conclusions:

1. Pregnancy is not a cause of epilepsy; the epilepsy of olden times so described is the eclampsia of modern times.

2. The influence of pregnancy upon preëxisting epilepsy is favorable, unfavorable or null. When favorable it either suspends the attacks, or diminishes their frequency. When unfavorable it increases their frequency. Generally the character of the attacks is not modified. The form and intensity remain the same.

3. Those cases in which the influence of pregnancy is favorable are the most numerous.

4. In the same woman, the influence of pregnancy upon epilepsy is stereotyped, uniform. The effect produced by the first pregnancy is repeated by the following pregnancies.

5. The modifying influence of pregnancy is generally limited to the duration of gestation. In other words, the ultimate progress of the epilepsy is not modified.

6. There does not seem to exist a group of precise conditions, clearly determined, which would enable one to prognosticate the modifications which pregnancy might exert upon epilepsy.

7. The influence of epileptic attacks upon pregnancy is null. They do not produce either abortions or premature deliveries. The children are born alive and at term.

8. Labor is not a cause of epilepsy.

9. The influence of delivery upon preëxisting epilepsy is null.

10. In those exceptional cases where delivery occurs during an epileptic attack, there seems to be no influence upon the uterine contractions.

11. Marriage does not cure epilepsy, it aggravates it.

12. Bromidism which is useful to the mother, is not injurious to the child.

13. Epilepsy does not appear to predispose to eclampsia.

THE

Journal of American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor

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Address

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 65 RANDOLPH STREET,
CHICAGO, ILLINOIS

SATURDAY, JUNE 21, 1884.

HEROIC DOSES PROMPTED BY GERM THEORIES.—During the last twenty-five or thirty years the profession has been strongly influenced by a prevailing therapeutic skepticism. It had become a popular habit to decry active medication in the treatment of almost all forms of disease, and to extol the powers of nature aided by simple hygiene. The reaction from this state of skepticism and expectancy in the treatment of disease, began with the revival of the antipyretic treatment of fevers, and is being pushed on by the rapid development of the doctrines of germ etiology and consequent germicide therapeutics, until even now, it is becoming an important question whether the patients are not in more danger from the large doses of microbe remedies administered in some cases, than from the microbes themselves.

Our attention was directed to this subject by two paragraphs in the present number of this JOURNAL, one under the head of Medical Progress, and the other in the Proceedings of the Illinois State Medical Society. In the first, Dr. Guaita is represented as attributing the "summer diarrhœa of children" to the presence of a special microbe, and as giving to children between 6 months and 2 years of age, affected with the disease, first a purgative of calomel or jalap, followed by from 4 to 6 grammes (℥i to ℥iss) of benzoate of sodium dissolved in 100 grammes of water every twenty-four hours for two days. On the third day he gives a milder purgative of magnesia or manna, and then resumes the administration of the benzoate of sodium, and continues it from two to four days longer. It will be seen that the quantity of the benzoate reported as given in the twenty-four hours, is equal to from 2½ to 3⅘ grains every hour. We have repeatedly seen decidedly sedative or depressing effects from such doses, given to children between three and five years of age, only once in from two to three hours. When they are given every hour for several days in succession, to infants under one year of age, aided by one or two cathartics and an almost entire prohibition of nourishment, we are quite certain the little sufferers are in more danger from the remedial measures employed than from all the microbes they may have in any part of their digestive organs.

The paragraph in the Proceedings of the Illinois State Medical Society relates to the, so-called, specific treatment of diphtheria, by large doses of the corrosive chloride of mercury.

In the paragraph alluded to, the doses given by Dr. Cook are not stated, but they ranged from two to three milligrammes (gr. $\frac{1}{30}$ to $\frac{1}{20}$) at short intervals, to children between three and ten years of age. These doses, though large enough certainly to be efficient, were yet within the limits of safety, so far as direct toxic effects upon the patients are concerned. But elsewhere we have seen several reports representing the giving of eight, ten, and even fifteen milligrammes (gr. $\frac{1}{8}$-$\frac{1}{6}$ and $\frac{1}{4}$) at a dose, of the same active drug, to children suffering from severe diphtheria. That this disease is accompanied by a very marked diminution of susceptibility to the influence of all drugs, is well known; and that some cases recover after taking very large doses of bichloride of mercury, whiskey, and many other things, is true. This, however, does not prove that such doses, repeated at short intervals, are not liable to accumulate, in one or two days, a sufficient quantity of the drug to produce dangerous or even fatal effects.

DINNER TO DR. ALFRED STILLE.—On the evening of the 5th inst. a dinner was tendered to Dr. Alfred Stillé, on behalf of the medical profession of Philadelphia, prompted by his recent retirement from the Chair of Theory and Practice of Medicine in the University of Pennsylvania, after a distinguished career as a teacher, author, and general practitioner. The entertainment was an elegant one, and the occasion highly enjoyed by the participants. Dr. J. M. DaCosta, President of the College of Physicians, presided; and the occasion was honored by the presence of Dr. Austin Flint, of New York; Dr. George C. Shattuck, of Boston, and Dr. J. S. Billings, of Washington, as guests.

The place vacated by Dr. Stillé has been most ap-

propriately and worthily filled by the appointment of Dr. Wm. Pepper, who is also Provost of the University.

NEW JERSEY STATE MEDICAL SOCIETY.—At the recent annual meeting of the Society, the following officers were elected for the current year: President, Dr. P. C. Baker, of Morristown; Vice Presidents, Drs. Joseph Parrish, of Burlington; Charles J. Kipp, of Newark, and J. W. Ward, of Trenton. Corresponding Secretary, Dr. Wm. Elmer, Jr., of Trenton. Recording Secretary, Dr. Wm. Pierson, Jr., of Orange. Treasurer, Dr. W. W. L. Phillips, of Trenton.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.—This organization, which was formerly called the Tri-State Medical Society, will hold its next regular meeting in Springfield, Illinois, in September next.

GOVERNMENT PRIZES FOR IMPORTANT DISCOVERIES IN MEDICINE.—Our Washington correspondent in the present number of the JOURNAL, gives a petition recently presented to Congress, asking the National Government to offer a prize of $100,000 for the discovery of the efficient cause of yellow fever, or of a reliable mode of preventing its epidemic prevalence. The evident object of the petitioners is to excite the most active and persistent investigation concerning the etiology and mode of propagation of yellow fever, by holding out the certainty of an ample reward to the investigator who shall actually succeed in identifying its efficient cause or in reliably controlling its propagation and diffusion. The object is a very important one, and we may concede it to be a proper function of government to appropriate money for its promotion. But is the offering of a large prize the most appropriate and efficient method for the Government of a great Nation to adopt, for the promotion of scientific investigations, and especially for the promotion of an investigation so extensive and complicated, and withal so intimately related to the sanitary and commercial interests of the whole people, as that for the identification of the cause or causes of yellow fever? The only valid excuse for asking government aid, is the fact, that the time and means required for prosecuting the investigation proposed to a thoroughly reliable and successful issue, are beyond the reach of the individuals most competent to execute the work. Yet the offer of a prize of $100,000 to be paid only after the investigation has been successfully completed, and then solely to the one fortunate competitor, furnishes no one with either food, clothes, or materials while prosecuting the important work, perhaps at the risk of his own life. It seems to us more consonant with the dignity and honor of the Government, as well as far more likely to accomplish the object desired, to appropriate a sufficient sum of money, whether it be $50,000 or $500,000, and charge the National Board of Health or some competent commission with the duty of employing a sufficient number of the most competent and reliable investigators to man every department of such an inquiry, and prosecute it at every available point, until the results obtained were clearly demonstrated facts. Such a course would permit the necessary combinations of labor and skill, and the prosecution of parallel lines of work in different places, and secure to each scientific workman a just compensation at the time he would most need it.

SOCIETY PROCEEDINGS.

THIRTY-FOURTH ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY.

[CONTINUED FROM No. 24.]

WEDNESDAY, MAY 21, 1884—SECOND DAY.

Dr. Christian Fenger, of Chicago, read a paper on Excision of the Hip and Knee Joints, with special reference to the final results of successful operations, these results being illustrated by the exhibition of patients treated by Dr. Fenger.

Dr. M. F. Bassett, of Quincy, read a paper on Vaccination, taking the ground that humanized virus, as shown by a long experience, was preferable to bovine virus, and produced results more satisfactory. So far as he was concerned, he was determined that his patients who repudiated humanized virus should take the risk of death by small-pox rather than receive bovine vaccination at his hands. The paper led to a debate. Dr. Lyman said there was one thing not noted in the paper, and that was that the humanized virus produced results in five days, and the bovine in from seven to ten days. Dr. Ingals said it was more important to prevent disease than to cure it. He had used in the main humanized virus, but of late years had used bovine virus. One was just as good as the other if it was good virus and judiciously applied. He had never perceived any great difference of results in the use of both kinds. Dr. E. P. Cook indorsed Dr. Ingals' remarks, and took exceptions to Dr. Bassett's paper. Dr. A. B. Strong, of Chicago, said in a wide experience in vaccination he had found that bovine virus had taken more violently and produced more fever than human virus. Dr. Cochran, of Greenfield, was opposed to the vaccination of infants with humanized virus, on account of the danger of syphilitic poison. Dr. Johnson, of Chicago, said he had studied the effects of 40,000 vaccinations with humanized virus in this city after the great fire, and there was not a single case in which any syphilitic or constitutional disease had resulted. He had the statis-

tics of these cases, and also of the work done by the State Board of Health in vaccinating with bovine virus thousands of emigrants arriving here on their way west. Vaccination was a fine art, and if practiced with sufficient care was always beneficial. Dr. Gill, of Cleveland, Dr. S. J. Jones, and Dr. Andrews, of Chicago, took part in the close of the discussion, which resulted in the decision that the condition of the patient and the manner of applying the virus caused various results, but that either bovine or humanized virus was efficacious, and would continue to be used by physicians according to their preference.

A recess of ten minutes was taken, to give the delegates time to select a member from each county for the Nominating Committee, and after their report was received, an adjournment was taken until 2 o'clock.

THE AFTERNOON SESSION.

At the opening of the afternoon session Dr. H. A. Johnson, of Chicago, read an interesting and technical paper on the "Bilateral Paralysis of the Abductors of the Vocal Chords." He said the difficulty was one solely of inspiration. Patients have been known to die suddenly. One of the spmptoms of the disease was difficult breathing. In every case there was greater difficulty in inspiration than expiration. To illustrate his subject the doctor exhibited a patient, who had been subjected to the operation of tracheotomy by Dr. Edmund Andrews on May 8, 1881, and who now breathes freely through a tube with a ball slot inserted in his neck, which he will be compelled to wear all his lifetime.

Dr. Graham, of Chicago, produced a girl 13 years of age upon whom the operation of tracheotomy had been performed by himself and Dr. A. B. Strong, with advice from Dr. Skeer. The operation was made four weeks ago. In this case the patient was afflicted with goitre, which was being reduced by daily applications of iodine and galvanic treatment. An incision for a tube had been made above the thyroid, but a lower one had to be made before the patient was given relief. In this case the Durham and other ordinary fenestrated tubes could not be used, and a tube was invented for the purpose. The patient was now doing nicely, although at one time she was in a decidedly precarious condition.

The Committee of Arrangements announced the election by invitation of Dr. A. J. Stone, of St. Paul.

Dr. J. P. Matthews read a paper on the diseases of children. The higher mortality among children over adults might be accounted for, first, on the principle of the survival of the fittest, and, after this, by injudicious clothing, bad diet, and impure air. These gave rise to the diseases that wrought the greatest havoc among children. Scarlatina was in this category. It was generally imported, although the germs might have had their origin in certain undiscovered meteoric conditions. The doctor detailed a number of cases illustrating the insiduous character of the contagion and the ease with which it spread. He had found an efficacious treatment to be sponging with vinegar, the application of tincture of aconite and of carbolized vaseline to ulcers. Diphtheria arose from the same sources, practically, as scarlatina, as did also membraneous croup. For these cases he had used, with the greatest success, a steam bath, holding the patient where it would inhale the steam and fumes from the slacking of quick lime. In cases of diarrhœa and other infantile complaints the milk and food supply was to be considered; the mother's mode of life, and her ignorance and carelessness of the first principles of the proper care of her children, were not only the causes of much disease among infants, but it prevented successful treatment. Children were also given too much tea and coffee. It led to tobacco and whiskey and other stimulants in later life. A cup of strong tea or coffee at night often prevented a strong man from sleeping by acting directly on his brain, and what must be the effect of such powerful stimulants and astringents upon the delicate and sensitive nerve-tissues of a child? In the vast majority of the diseases of children, and especially in epidemics, the disease arose from the breeding of germs.

Dr. K. E. Rich, of Winona, and Dr. Whitmire, of Metamora, accepted the germ theory, and the latter had used the steam and a chloride of lime bath with beneficial results in several cases. Dr. Hamill, of Chicago, said he had used with great success a preparation of chlorate potash and guaiacum. He was in the habit of treating diphtheria by this method.

Dr. Whitmire explained, in response to a question, that he had applied the chloride of lime and steam treatment by the spray method.

Dr. Davis, of Chicago, said that inasmuch as the germ idea seemed to be a favorite one, he would like to ask what effect large doses of bi-chloride of mercury had had in cases of diphtheria. Since everything was running to germs, and this was the greatest germicide known, he would like to know the effect of its use by members of the Society.

Dr. E. P. Cook, of Mendota, a former President of the Association, acknowledged that he had had a limited experience in the use of bi-chloride of mercury. His experience of its use was that in follicular pharyngitis the patients all got well, but in malignant diphtheria they died. In the latter form of the disease, seven out of a group of eight of his patients had died after treatment with bi-chloride of mercury.

Dr. Wetmore, of Waterloo, read a paper on Physiology. The speaker illustrated his theme with a number of charts.

Dr. J. F. Todd, of Chicago, read a paper on "Original Investigation," pertaining in its subject-matter more particularly to the etiology of disease.

THIRD DAY.

The third day's session of the Illinois State Medical Society opened in the First Methodist Church at 9:45 o'clock Thursday morning. In the absence of the President, Dr. Andrews, Dr. David S. Booth occupied the chair. The Committee on Medical Legislation for the Insane, consisting of Drs. Walter Hay, E. P. Cook, and William Hill, reported progress, and was continued for the purpose of presenting certain suggestions to the legislature at the next meeting of that body.

Dr. A. B. Strong, of Chicago, called the attention

of the society to the deficiency in the wording in the law of this State providing anatomical subjects for dissection, and asked every physician to aid in the enactment of a law that would be *mandatory* and thus enable the profession to secure subjects for dissection without the usual circumlocution they had been compelled to resort to during the past year. There had been more difficulty experienced in getting cadavers for dissection since last winter than ever before. Dr. Cook said that although he was not locally interested in the pursuit of medical studies, yet he would heartily indorse any effort to secure needed legislation that would enable the Faculty of the medical colleges to secure the bodies of paupers after all due diligence had been used to find the friends of the unfortunates. He advised that attorneys be employed for that end, for the reason that it would be undignified for the members of the profession to enter ward politics for any such purpose. Dr. M. F. Bassett thought that cities of 100,000 inhabitants and over, should not be favored in the law governing the disposition of the pauper dead any more than cities of lesser population, which may contain medical schools. Dr. H. A. Johnson, of Chicago, said the present law was imperfect, but it was the best that could be secured at the time of its passage. It required amendments and additions to the end that medical science may progress and the graves of the dead be saved from desecration. Two arguments should be used in urging the passage of a new bill; first, the demands of humanity in the education of men in medical schools, and second, the pauper class only should be drawn from to secure subjects, and to achieve that result, public sentiment, through the press, should urge legislators to the proper action.

Dr. R. Boal, of Peoria, suggested that the members of the Legislature should attend to the bills on dissection and on the commitment of the insane early in the session. Dr. Walter Hay advised the delegates to have patience until the Legislature should meet again, when new bills might be presented, and in the meantime, the members of the Legislature could be seen by the physicians and copies of the laws proposed furnished and their adoption urged. Dr. A. H. Burr wanted to have the proposed amendments read, but on motion of Dr. Cook, the discussion was closed.

Dr. E. Ingals, Chairman of the Nominating Committee, reported the following list of officers and standing and special committees for the ensuing year, and the Society adopted the report: President, Daniel S. Booth, Sparta; First Vice-President, S. C. Plummer, Rock Island; Second Vice-President, W. T. Kirk, Atlanta; Treasurer, Walter Hay, Chicago; Secretary, S. J. Jones, Chicago; Assistant Secretary, H. B. Buck, Springfield. Members of Judicial Council, S. K. Crawford, Monmouth; George Wheeler Jones, Danville; John Wright, Clinton. Committee of Arrangements, Drs. Griffith, Matthews, Rauch, Whitney, and Buck, all of Springfield. The standing committees are as follows: Committee on Practice, Norman Bridge, Chicago; C. H. Norred, Lincoln; J. R. Livingood, Rossville. Surgery, W. A. Byrd, Quincy; D. A. K. Steele, Chicago; Cass Chenowith, Decatur. Obstetrics, Charles W. Earle, Chicago; T. D. Washburn, Hillsboro; Mrs. Anna S. Adams, Peoria. Gynæcology, David Prince, Jacksonville; Sarah Hackett Stevenson, Chicago; O. B. Mill, Peoria. Materia Medica and Therapeutics, Thomas M. McIlvaine, Peoria; J. F. Todd, Chicago; Miss Catharine Miller, Lincoln. Ophthalmology and Otology, W. T. Montgomery, Chicago; C. R. Park, Bloomington; Robert Tilley, Chicago. Necrology, E. Ingals, Chicago; William Hill, Bloomington; M. F. Bassett, Quincy. Special Committees: Laryngology, E. F. Ingalls, Chicago. Oral Surgery, J. S. Marshall, Chicago. Pediatrics, Mrs. Dr. A. F. Rooney, Quincy. Dermatology, Dr. W. J. Maynard, Chicago. Orthopædic Surgery, Dr. C. E. Webster, Chicago. Tetanus, C. Truesdale, Rock Island. Insanity, R. J. Patterson, Batavia. Alcohol as a Therapeutic Agent, M. F. Bassett, Quincy. Effects of Malaria in Puerperal Cases, H. Judd, Galesburg. Physiology, A. Wetmore, Waterloo. Treatment of Epilepsy, D. R. Brower, Chicago. Analysis of a Certain Class of Remedies of which Physicians are Not Positive as to Their Therapeutic Value, W. L. Ransom, Rockford. Biographical Committees: J. H. Hollister, Chairman; on the Influence of Appreciable Meteorological and Topographical Conditions on the Prevalence of Acute Diseases, N. S. Davis, J. H. Hollister, J. F. Todd, of Chicago. Medical Legislation, B. M. Griffith of Springfield, Walter Hay of Chicago, A. B. Strong of Chicago, J. L. White of Bloomington, T. B. Haller of Vandalia, W. A. Haskell of Alton, E. P. Cook of Mendota. The Committee on Original Investigation is to be continued. The Committee on Malignant Growths, Dr. C. Fenger, Chairman, was continued for another year.

FURTHER REPORTS.

Dr. Ransom, of Rockford, read a report on certain therapeutical remedies, with which he said physicians were not wholly acquainted. He called attention particularly to the "spurge," or euphorbia corollata, commonly called the blooming spurge, wandering milkweed, go quick, etc. The resinous principles of euphorbia were emetic, diuretic, and diaphoretic in their action. It was but little used except by the eclectics, and was given in one-tenth and one-thirtieth grain doses, and even in one and two-grain doses sometimes. It might be given in all cases of dropsy, and especially in hydrothorax, and it was said to excel ipecacuanha as an expectorant for the latter affection. Tincture of euphorbia was used as an antidote for rattlesnake-bites, and the stings of tarantulas and other poisonous insects. His conclusions were that it could be applied most efficaciously in infusions, in cases of dropsy, where there are functional cardiac disorders, also in the treatment of ovarian cysts. He advised the use of the remedy in the dropsy of Bright's Disease, to remove the anasarca.

Dr. C. Fenger, of Chicago, read a paper on The Treatment of Acute Gangrene of the Lung. Four cases are now on record as having been operated upon. Two of the patients died, and one recovered

after a long convalescence. The fourth and last case was operated upon by Dr. Fenger in this city four weeks ago, at the end of the second week of the disease, which was the result of croupous pneumonia. The patient is now almost well. The doctor held that an operation is always justifiable, and if done early and with care would effect a cure in most cases.

The Standing Committee on Obstetrics was next heard, through Dr. H. K. Crawford, of Monmouth, who presented a report on Postpartum Hæmorrhage, of which he gave merely a condensed statement. There were embodied in the report 2,110 cases for the past twenty-five years. A few of the anomalies and deformities were mentioned of children at birth which closed the report.

Dr. R. H. Babcock reported a case of dexeocardia, in a child 3 years of age, which is not congenital. The liver is normally located, also the spleen; the heart had rotated to the right side. The doctor had seen a similar case in a man 32 years of age, six months ago.

THE AFTERNOON SESSION.

At the opening of the afternoon session the Secretary read a congratulatory telegram from the Missouri State Medical Society, in session at St. Louis, and was instructed to send a suitable reply. Dr. E. A. Ingersoll, of the Committee on Obstetrics, reported a case of caput succedaneum of a female child, weighing ten and one-half pounds at birth. The report was voted to be received and published. Dr. Vanhorn, of Jeffersonville, reported a paper prepared by Dr. Duhadway, of the same place, on Postpartum Hæmorrhage, which was received and ordered published. The reading of the remaining papers was limited to five minutes each. Dr. Caldwell, of Freeport, read a report on gynæcology, being a paper on Ulceration of the Cervix Uteri, which was referred to the Committee on Publication. Dr. A. F. Rooney, of Quincy, submitted a paper on Menorrhagia, giving interesting details of the effect of female troubles in producing melancholia and insanity. It was referred to the Committee on Publication. Dr. R. Tilley, of Chicago, of the Committee on Ophthalmology, read a paper on the "Jequirity Bean," a solution of which, applied to the conjunctiva of the eye, is efficacious in the treatment of pannus and dry conjunctivitis, but should not be used in the case of very young people. The paper by Dr. I. N. Danforth, of the Committee on Simple Renal Catarrh, not being ready, he was continued on the committee for another year. Dr. B. F. Crummer, of Warren, presented a paper on Drugs and Medicines, in which he led the idea that patients and physicians would be better if the latter would compound their own prescriptions. The Treasurer, Dr. Walter Hay, reported receipts for the year of $1,742, expenditures of $601, and a balance on hand of $1,141. The report was accepted.

It was decided to read abstracts of the voluntary papers, so that under the by-laws they might be incorporated in the proceedings. The first was by Dr. F. C. Hotz, on Myopia Usually Developed During School Life. The doctor thought that there had been a great improvement in the typographical construction of school-books of late, and that the greatest danger was to be apprehended from miscellaneous literature printed in small and imperfect type. Dr. J. S. Whitmire, of Metamora, read a paper on the Suppression of Catamenia. He did not favor hip baths and catharsis, but avoidance of drugs and plenty of outdoor exercise for young people. Dr. C. E. Webster, of Chicago, read a paper on Potts' Disease of the Spine, and being a sufferer from the disease himself, his paper had additional interest. Dr. C. W. Earle, of Chicago, read a paper on Pancreatic Anæmia, giving the particulars of four cases treated by him. Dr. Robert Tilley exhibited an improved ether inhaler. A paper on Mastoid Abscess was read by Dr. E. L. Holmes, of Chicago. Dr. H. Gradle presented a paper on Purulent Inflammation of the Middle Ear.

The election of delegates to the American Medical Association, which meets in April next in New Orleans, resulted in the selection of the following list: Drs. G. M. Chamberlin, Walter Hay, R. Tilley, Moses Gunn, J. H. Hollister, F. C. Shaefer, L. H. Montgomery, J. F. Todd, N. S. Davis, W. W. Jaggard, Arthur R. Reynolds, S. H. Stevenson, D. W. Graham, N. S. Davis, Jr., L. L. McArthur, E. W. Andrews, W. T. Belfield, A. H. Burr, Simon Strausser, C. E. Webster, E. F. Ingals, H. A. Johnson, all of Chicago; and G. W. Jones, of Danville; P. H. Oyler, Mount Pulaski; H. Judd, Galesburg; M. F. Bassett, Quincy; S. K. Crawford, Monmouth; S. H. Lambert, Assumption; A. K. Vanhorn, Jerseyville; T. D. Washburn, Hillsboro; W. R. Caruthers, Delevan; O. B. Mill, Peoria; J. B. Matthews, Carlinville; Dr. Haller, Vandalia; E. P. Cook, Mendota; M. Reece, Abingdon; O. W. Moon, Lockport; C. C. Hunt, Dixon; C. L. Armstrong, Carrollton; J. F. Keifer, Sterling; W. L. Ransom, Rockford; H. B. Buck, Springfield; T. F. Worrell, Bloomington; B. M. Griffith, Springfield. Delegates to adjacent State Societies: Dr. R. W. Gillette, Danville, to Indiana; Dr. W. Mendenhall and Dr. B. H. Harris, of Groveland, to Missouri; Dr. L. H. Montgomery, of Chicago, to Ohio; Dr. E. Andrews, of Chicago, to Michigan; Dr. S. J. Jones, of Chicago, to Wisconsin; Dr. W. Hay, of Chicago, to Iowa.

Dr. Walter Hay offered a resolution, which was adopted, authorizing a prize of $100 for the best treatise on the treatment of diphtheria, and $100 for the best tabulated statement of any ten cases of any disease coming under the treatment of the practitioner, the same to be decided by a committee of three.

Dr. M. F. Bassett, of Quincy, offered resolutions returning thanks to the Chicago delegates for their hospitality.

The Society then adjourned, to meet in Springfield next year.

The Illinois State Board of Health is now engaged in revising the Register of Physicians, preparatory to publication. Any changes or corrections should be promptly sent to the secretary. Lists of the officers of the medical societies in the State are also requested.

BOOK REVIEWS.

ELEMENTS OF HUMAN PHYSIOLOGY. By HENRY POWER, M.B., F.R.C.S., Examiner in the Board of Anatomy and Physiology, Royal College of Surgeons, etc., etc. Philadelphia: 1884. Henry C. Lea's Son & Co.

The study of physiology, with all its fascinating details of experimental research, cannot be regarded as secondary, either in importance or interest, to the student of medicine. So extensive is its scope, and so inseparably is it bound to the kindred subjects of anatomy, physics and chemistry, that any attempt to separate it from them must inevitably lead to incompleteness and a certain degree of confusion, while it robs the subject greatly of its interest. To strip it only of the details of experimentation, leaves it bare enough; but when most of the considerations of physics, anatomy and chemistry are banished, there is left little besides the naked mathematics of physiology.

The volume in hand is one of the manuals for students of medicine. A small manual of a vast subject must necessarily be unsatisfactory in many regards, and so we find it in this instance; for, as we are apprised in the preface, the simultaneous appearance of four complementary volumes has caused the omission of many subjects usually included in the text-books of physiology.

The character of the work done is excellent, but there is too much left undone to make this book a very great aid to the average American student, at least, who would scarcely find it a valuable adjuvant in preparing for his examinations, provided he had in his library a copy of Foster, Dalton or Carpenter.

T. C. H.

FOREIGN CORRESPONDENCE.

PARIS, May 21, 1884.

It was only about a month ago that Professor Wurtz delivered a most touching funeral oration over the tomb of his late master and friend Professor J. B. Dumas, the illustrious chemist and Perpetual Secretary to the Academy of Sciences, who died at Cannes on the 10th of April, but was interred in Paris.

Professor Wurtz has since been called away, and his death, which took place on the 12th instant, was as sudden as it was unexpected, and caused great consternation among all who knew him. He had been laboring under a diabetic affection, but nothing in his physical bearing or intellectual faculties betrayed any falling off, much less any thing that would portend so near a fatal end.

Dr. Adolphe Wurtz was a native of Strasburg, where he was born on the 26th of Nov., 1817. He went through his medical studies, and graduated at the Faculty of that city in 1843, when he sustained with great credit, his thesis on albumen and fibrine. Two years later he came to Paris, where his brilliant qualities soon became known, and he was appointed Chief of the Chemical Laboratory of the Faculty of this City and Assistant to M. Dumas, whom he eventually succeeded as Professor of Organic Chemistry at the School of Fine Arts. In 1847 he became Agrégé of the Faculty of Medicine, and was subsequently promoted to Professor of Chemistry. In 1866 he was unanimously chosen to the Deanship of the Faculty, which became vacant by the resignation of Professor Tardieu. During his Deanship he effected great reforms in the School of Medicine and was much beloved by both professors and students. In 1875 he resigned, owing to the multiplicity of his functions, but the Faculty conferred on him the title of Honorary Dean. In 1856 he succeeded the celebrated Magendie at the Academy of Medicine in the Section of Physics and Chemistry, and in 1867 was elected member of the Academy of Sciences. He was the author of several remarkable memoirs, bearing principally on Organic Chemistry, and he held a sort of transition position between the old and new schools. In 1850 he was created Chevalier of the Legion of Honour, and in 1869 was invested with the Grand Cross of the same Order for the valuable services he had rendered to science, and last year he was nominated Permanent Senator of the French Republic.

His funeral took place at the Père-Lachaise, in Paris, on Thursday last, with all the honours due to his rank as Senator and Academician. The Government, the School of Medicine, the Academies, and the various learned societies to which the deceased belonged, were represented by delegates, and several orations were pronounced over his grave.

At the death of Professor Lasègue, about a year ago, Professor Jaccoud was transferred to the chair of Clinical Medicine at La Pitié Hospital, and Professor Damaschino was appointed to succeed him in the chair of Medical Pathology at the Faculty of Medicine. In inaugurating his new chair and his summer course of lectures, he chose for his first lecture the History of the Circulation of the Blood, as a preliminary to his subsequent lectures on the Diseases of the Sanguineous and Lymphatic Vessels. In going back to the remotest periods of medical history, Professor Damaschino pointed out the vague notions entertained by the ancients in respect to the circulation of the blood, before the remarkable discovery of Harvey, which rendered his name immortal. In a few well-chosen phrases M. Damaschino gave an admirable exposition of the work done by the Alexandrian school for the advancement of medicine, the remarkable works of Galen, and rendered justice to the investigations so precise of Vesalius, the celebrated anatomist. He then referred in flattering terms to Sanctorius, the father of clinical thermometry; to Servetus, to Cesalpin, to Colombo, and finally to Harvey, the great discoverer of the circulation, whose theories and demonstrations were corroborated by the microscopic researches of Leuwenhœck. The latter made great advances toward the elucidation of cardiac pathology, which was gradually developed and perfected by Morgagni, Senac, Van Swieten, Avenbrugger, Corvisart, and Bouillaud. "A knowledge of pathology," added the Professor, "should

be obtained not only by clinical observation, but by the aid of every branch of all the sciences and instruments of precision applicable to medicine." It was thus that Marey rendered such signal service by his invention and practical application of the sphygmograph, which may be considered the crowning edifice of the discovery which has rendered the name of Laënnec immortal. Dr. Damaschino impressed upon his hearers the necessity of never flagging in their studies, and this advice applies as much to graduated practitioners as to medical students, as medicine is an ever-progressing science, and he who does not make himself acquainted with the new inventions or discoveries will find himself lamentably distanced by his more diligent confrères, as much to his own prejudice as that of his patients; and although a medical man should be eclectic, yet he should not sacrifice his personality to any particular doctrine or method simply because they are in fashion, but he must first put them to the crucial test of experimental and clinical observation before he adopt either.

Hitherto ophthalmia neonatorum has been a very common complaint among new-born infants in the lying-in institutions in Paris, but since the introduction of more sanitary measures this and other puerperal affections have been very much reduced. In addition to improved sanitation, the following course is adopted as a prophylactic measure against purulent ophthalmia: In changing the clothes of the infants morning and evening, a few drops of a 3 per cent. solution of boracic acid are instilled into the eye. This practice has been adopted at the "Clinique d'Accouchements," which has reduced the cases of ophthalmia from one in every six new-born infants to one in nineteen, according to a thesis lately submitted by Dr. Connen for the Doctorate of the Paris Faculty.

ALEX. BOGGS.

DOMESTIC CORRESPONDENCE.

FROM WASHINGTON.

MEDICAL MATTERS BEFORE CONGRESS—YELLOW FEVER.

June 3, Mr. Brown presented the following petition, which was referred to the Committee on Epidemic Diseases:

To the Senate and House of Representatives of the United States:

The undersigned respectfully represent that the insecurity to the public health from the epidemic prevalence of yellow fever is chiefly due to a total ignorance of the real cause of the disease, together with the circumstances and laws governing its generation, reproduction, and spread; that the portability and reproductive nature of said cause suggest the idea of physical and perhaps physiological qualities that may lead to its ultimate identification by some means within the reach of science, or, if not to this, to a more intimate knowledge of its organic potencies by which its virulence as a poison may be reduced; therefore, with a view to stimulate inquiry in this direction, and thereby subserve the commercial interests of the country and the welfare of its citizens, your petitioners pray your honorable bodies to offer a premium of $100,000, open to the world, for the discovery of the true cause (or germ) of yellow fever, with (or in default thereof) any certain means of effecting its prevention, destruction, or material modification, the same to be subjected to such practical tests, under the direction of Congress, as will determine its real merits and efficiency.

In support of this petition we will present no array of statistics to show the frequency of the epidemic prevalence of the disease, the loss of life and suffering to the people, the disasters to commerce entailed by the suspension of intercourse with infected ports and even cities of the interior of our country, the bankruptcy of cities caused by its blighting presence, or even that it (yellow fever) is a perpetual menace to this country. All of this and much more is familiar to you and to the intelligent American public, who since the epidemics of 1876, 1878, and 1879, have favored controlling legislation on the subject. We do desire, however, to present and stress the fact, more potential than the most convincing statistics above alluded to, that the failure of sanitary bodies, as well as of all legislation (State and Federal), to give security to the public interests against this disease, which ranks floods and fire and all other sources of devastation in the certainty of its coming and in the powerlessness of the people before it, arises from a painful, helpless ignorance of its cause and the laws governing its origin and reproduction. Its fatality is but slightly affected or altered by medical treatment, the death-rate being determined rather by the degree of poisoning.

Science hitherto offers no practical defense against it, except in a quarantine, which to be reliable must be so perfect as to prevent evasion. This is so difficult of attainment that when a sporadic case occurs in one of our ports it is forthwith charged to an evasion of quarantine, and every effort made thus to explain its origin. When the disease extends to an interior city the difficulties in the way of a successful quarantine are greatly increased. We therefore pray a beneficent government to aid in dispelling this cloud of ignorance with the light of positive knowledge, if it be attainable, by stimulating observers, known and unknown the world over, with the hope of reward as well as of merited honor and distinction.

Positive knowledge upon all subjects pertaining to sanitary science, and on this one in particular, is the great desideratum. All measures of quarantine and internal hygiene, however judicious and forcible, are simply defensive in character and altogether indirect, and must of necessity remain so as long as directed against an unseen, intangible, and unknown entity protected by ignorance and clothed with mystery.

The discovery of only a single additional feature in the character or quality of this poison, or germ, or cause, of whatever nature or source, may reveal the secret of its prevention, destruction, or material modification, and thus place it in the power of sani-

tarians to disarm it as completely as vaccination does small-pox.

The aim of the present efficient quarantine, on which confidence mainly reposes, is to prevent its introduction; it may or may not confer practical immunity against the disease. Too much, however, should not be conceded to it, since the history of yellow fever shows that even when one far less efficient was in force, or virtually none at all, yellow fever has spared for years in succession the Gulf and Atlantic coasts. But, admitting all that its most sanguine advocates may claim for it, shall its enforcement be accepted as a perpetual duty and the limit of our resources; or, in imitation of the wise policy of other enlightened governments, shall we so legislate as to invite a knowledge of the *causa causans*, and thus possibly make precise for its destruction what is at present left solely to empirical observation? The problem is more pressing now than ever, because the railroad transportation of disease-germs has acquired equal dignity with their importation by ships, and thus the danger has been made co-equal with the railroad development of the Southern section.

The French and German cholera commissions now engaged in a philosophic and strictly scientific inquiry into the cause of Asiatic cholera, with a view to the arrest of this disease in its westward progress, may be referred to in this connection. One lesson is certainly taught by the example thus set to the world by France and Germany, namely, the folly of longer dependence upon empirical observation for protection against this subtile disease; the line of progress is the path of diligent research, fearlessly, faithfully made.

The British Parliament voted £30,000 to the immortal Jenner for the discovery of vaccination against the then greatest scourge to mankind. The prevention of small-pox by vaccination is indeed the greatest achievement of sanitary science known to the world; it was then seemingly as unattainable as the problem in hand may now appear. Who will dare say that a similar ultimate success may not attend the effort that you are solicited to further by a premium scarcely equal to the annual appropriation made for the maintenance of quarantine? The award is based upon the successful discovery of some certain means of preventing, destroying, or materially modifying the cause (known or unknown) of yellow fever. It is not offered for the successful treatment of yellow fever; that is a problem for the medical profession, who wish only to become the beneficiaries of whatever light, research promoted by your generous interest, may reveal. It is rather for the prevention of the disease, with all the beneficent results that are likely to follow to humanity and to commerce, that you are asked thus to legislate.

The amount specified is not large when the time, labor, and expense incident to such investigations are taken into consideration.

WM. H. DOUGHTY, M.D.

AUGUSTA, Ga., April 30, 1884.

GEORGIA MEDICAL SOCIETY, SAVANNAH, Ga., December 14, 1883.

Dear Sir: At a meeting of the Georgia Medical Society, held the evening of the 11th instant, the committee to whom was referred your papers and resolutions to memorialize Congress to appropriate a premium of $100,000 for the discovery of the cause of yellow fever, &c., reported for its indorsement, and the Society unanimously indorsed the same.

Very respectfully,

[SEAL.] JNO. M. JOHNSTON, M.D.,
Recording Secretary.

W. H. DOUGHTY, M.D., Augusta, Ga.

The above petition was read in meeting of the Board of Health of Augusta, Ga., and received its approval, and was ordered to be signed officially by the President and Secretary of said Board.

AUGUSTA, Ga., May 1, 1884.

[SEAL.] EUGENE FOSTER, M.D.,
President Board of Health, C. A.

Attest:

L. T. BLOME,
Secretary Board of Health, C. A.

This memorial was read before the Augusta Academy of Medicine, and received its unanimous indorsement. The President and Secretary were directed to append their official signatures.

AUGUSTA, Ga., May 9, 1884.

THEO. LAMB, M.D.,
President Augusta Academy Medicine.
WM. H. HARRISON, SR., M.D.,
Secretary Augusta Academy Medicine.

In consequence of the receipt of this petition, Mr. Brown introduced a bill, Senate 2281, which embodied its request.

ARMY MEDICAL DEPARTMENT BUILDING.

The Senate passed the following bill:

That the sum of $300,000 is hereby appropriated, out of any moneys in the Treasury not otherwise appropriated, for the purchase of a site and the erection in Washington of a brick and metal fire-proof building to be used for the safe-keeping of the records, library, and museum of the Surgeon-General's Office of the United States Army; and the building shall be constructed in accordance with plans and specifications provided by the Surgeon-General of the Army and approved by the Architect of the Capitol Extension; and the money hereby appropriated shall be expended under the direction and superintendence of the officer in charge of the State, War, and Navy Department building.

MEDICAL MATTERS BEFORE CONGRESS.

May 29, Mr. Riggs, of Illinois, reported from the Committee on Public Health a recommendation that the following resolution be referred to the Committee on Appropriations, which was so ordered:

Resolved, That the Committee on Appropriations of this House be, and they are hereby, instructed to include in the sundry civil appropriations for the year ending June 30, 1885, the following items:

"For the contingent epidemic fund to be at the disposal of the President and to be expended at his discretion, the sum of $200,000, including the unexpended balance of previous appropriations, amounting to $115,000.

"For the support of the National Board of Health the following sums:

"For pay and expenses of the members of the board, and for the investigation of questions affecting the public health, including the study of other diseases than small-pox, cholera, and yellow fever, $18,000.

"For rent, fuel, postage, telegraphing, printing, and all other miscellaneous expenses, $2,500.

"For disbursing agent, clerks, and messenger, $4,500; amounting in the aggregate to $25,000."

MISCELLANEOUS.

OFFICIAL NOTICE.

ANNUAL DUES from members of the Association—*Five Dollars* per annum—are payable directly to the Treasurer. Such payment entitles them to receive the JOURNAL of the Association for one year.

SUBSCRIPTIONS TO THE JOURNAL from those who are not members should be forwarded to the office of publication, Chicago.

BACK VOLUMES OF THE TRANSACTIONS may be procured, at reduced rates, by addressing the Treasurer.

THE INDEX to the 33 Volumes of Transactions will be forwarded, postpaid, on receipt of *One Dollar* by the Treasurer.

According to a resolution passed May 9, 1884, at the Washington meeting, continuous payment of Annual Dues is required, to retain permanent membership.

RICHARD J. DUNGLISON, M.D.,
Treasurer.

Lock Box 1274, Philadelphia, Pa.

NEW BOOKS.

Nettleship, E. The Student's Guide to Diseases of the Eye. 3d edition, with numerous additions. 12mo, 428 pp. London: Churchill. 7s. 6d.

Philpot, H. J. Diet System Three Tables, No. I, Diabetes, II, Gout; III, Dyspepsia. In cases. London: Low. 1s each.

Purser, J. M. A Manual of Histology and of Histological Methods. 12mo, 396 pp. London: Longmans. 5s.

Thudichum, J. L. W. Aids to Physiological Chemistry. 12mo, 114 pp. London: Bailliere. Sewed, 2s.

Whitehead, W., and Pollard, B. The Surgical Treatment of Tumors and other Obscure Conditions of the Bladder. 8vo. London: Churchill. 1s.

Kühne, W. Die motorische Nervenendigung, besonders nach Beobachtgn. an Muskelquerschnitten v. Dr. M. B van Syckel aus New York. (Aus "Verhandlgn. d. naturhist.-med. Vereins zu Heidelberg.") 8vo, 9 pp. Heidelberg: C. Winter.

Lubarsch, O. Welche Berücksichtigung verlangen die Verdauungs u. Harnorgane Laparotomirter in der Nachbehandlung? Inaugural-Dissertation. 8vo, 56 pp., mit Tab. und 8 graph. Steintaf. Strassburg: Trübner.

LIST OF CHANGES IN THE STATIONS OF MEDICAL OFFICERS, U. S. NAVY, FOR THE WEEK ENDING JUNE 14, 1884.

P. A Surgeon A. A. Austin, detached from U. S. S. "St. Louis," ordered to Naval Rendezvous, Philadelphia.

P. A. Surgeon T. M. Edgar, detached from U. S. S. "Wabash," ordered to U. S S. "Nantucket"

P A. Surgeon L. B. Baldwin, ordered to U. S. S. "Wabash."

Assistant-Surgeon H W. Whitaker, detached from Naval Rendezvous, Phila., ordered for examination preliminary to promotion.

Assistant-Surgeon F. A. Hesler, ordered to U. S. S. "Minnesota."

Assistant-Surgeon V. C. B. Means, ordered to U. S S "Vermont."

Medical Director T. M. Browne, to attend the International Health Exhibition at Liverpool, Eng., and Delegate to International Medical Congress at Copenhagen, per steamer of July 2.

Surgeon I. R Tryon, to same duty, with Medical Director Browne, and on completion of this duty, to report for duty on U. S. S. "Quinnebaug."

Surgeon J. Hugg, detached from "Quinnebaug" on reporting of relief, to return home and report arrival.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT UNITED STATES ARMY, FROM JUNE 7, 1884, TO JUNE 14, 1884.

Middleton, Passmore, Captain and Assistant-Surgeon, leave of absence extended three months on surgeon's certificate of disability. (Par. 3, S. O. 134, A. G. O., June 10, 1884.)

Bennett, Richards, Captain and Assistant-Surgeon, assigned to duty as post surgeon, Mount Vernon Barracks, Ala. (Par. 2, S. O. 113, Hdqrs. Department East, June 9, 1884.)

Gardner, Edwin F., Captain and Assistant-Surgeon, relieved from duty at Fort Walla Walla, Wash. Terr., and assigned to duty as post surgeon, Fort Canby, Wash. Terr. (Par. 1, S. O. 75 Hdqrs. Department of Columbia, June 3, 1884.)

Cunningham, T. A., Captain and Assistant-Surgeon, ordered to relieve Assistant-Surgeon C. B. Byrne, U. S. A., from duty at Fort Lewis, Col., Assistant-Surgeon Byrne, when so relieved, to proceed to Fort Gibson, I. T., and report to the post commander for duty. (Par. 2, S. O 112, Hdqrs. Department of Mo., June 4, 1884.)

Banister, J. M, Captain and Assistant Surgeon, granted leave of absence for one month and 7 days, to commence June 13. (S. O. 22, Hdqrs. Division of the Atlantic, June 5, 1884.)

McCreery, Geo First Lieut. and Assistant-Surgeon, granted leave of absence for two months, with permission to apply to the Adjutant-General of the Army for two months's extension. (Par. 3, S. O. 56, Hdqrs. Division of Missouri, June 5, 1884.)

The Army Medical Examining Board, New York City, is dissolved, to take effect June 14, 1884.

Brown, Jos. B., Lieut-Colonel and Surgeon, upon completion of the business of the A. M. B., directed to comply with S. O. 44, current series, A. G. O., and return to New York City.

Clements, Bennett A., Major and Surgeon, directed to await orders in New York City.

Kimball, James P., Captain and Assistant-Surgeon, granted leave of absence for two months and 14 days, to take effect June 14, 1884, and ordered to relieve, August 28, 1884, Captain Robt. H. White, Assistant-Surgeon, from duty at U. S. Military Academy, West Point, New York.

Captain White, on being relieved, to report in person to the commanding general Department of Cal. for assignment to duty

Sternberg, Geo. M., Major and Surgeon, relieved from temporary duty in S G. O., and ordered to assume the duties of attending Surgeon and examiner of recruits, at Baltimore, Md. (S. O. 121, A. G. O., June 6, 1884.)

Finley, J. A, Captain and Assistant-Surgeon, relieved from duty at Fort Stockton, Texas, and assigned to duty as post surgeon, Fort Concho, Texas. (Par. 4, S. O. 69. Hdqrs. Department of Texas, June 2, 1884.)

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